

CORE Organic Country Report



The National Research Programmes on Organic Farming 2000–2006: French Country Report

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Photo: CREAP MP (Organic Farming Experimentation and Research Centre specialized in arable crops)

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1 Introduction

In France, the research programmes have always been fairly decentralized. They are being carried out at several research institutions¹ and universities. Government funding and sources of financing are available at national, regional and district level. Even at the national level, it is not easy to identify a real unified research policy. The main way to analyse the funding systems is to follow up the topics mentioned in the calls for proposals, which are often very much influenced by various policy networks.

During the last decades, farmers' organisations have influenced the main themes of the research programmes, both at the National Institute for Agricultural Research (INRA) as well as at other institutions. However, since the beginning of the 1990s, a real diversification of the themes can be observed, due to substantial changes that have been taking place in the agricultural sector since then. Changes include the diversification of production models towards designation of origin (DOC); introduction of farmhouse products, extensive agriculture, breeding with suckling cows; increased attention on rural development, environmental aspects, sustainability, etc. Organic farming has a special place in this framework as its policy networks had to fight a long time to become recognised.

In the year 2000 a national programme for organic farming was set up by the Ministry of Agriculture and Fisheries and the National Institute for Agricultural Research (INRA). At the same time there were also other calls for proposals from various bodies, both at national and regional level, which cover organic farming within the overall topics. Several of these programmes are described in this article, even if they are not specialised on organic farming. It should be mentioned in this context that the main responsible experts are represented in the different boards. Organic farming projects are therefore consistent and overlapping is in fact often avoided.

The main actors in French agricultural research are

- National Institute for Agricultural Research (INRA),
- the Ministry of Agriculture and Fisheries (Teaching and Research Department DGER) and the Ministry of Research,
- the Union of the Technical Institutes for Agriculture (ACTA), consisting of 20 technical institutes organised by agricultural commodities,
- the Union of the Technical Institutes for Food Processing (ACTIA), consisting of 15 technical institutes organised by processed commodities,
- the Agency for Agricultural Development (ANDA) which was replaced in 2004 by the Agency for Agricultural and Rural Development (ADAR) who are yearly issuing calls for proposals.

The whole system was simplified and rationalised in 2005 by the creation of the National Research Agency.

¹ Among the most important are the National Institute for Agricultural Research (INRA); the National Centre for Scientific Research (CNRS), the Centre of Research for Agricultural Engineering (CEMAGREF) and the Institute for medical research (INSERM).

2 History of Organic Farming Research in France

During the last decades, agricultural institutions and trade organisations had long viewed organic farming as a marginal activity. Thus, institutions only started in the 1980s and 1990s to carry out specific activities around research in organic farming. The Technical Institute of Organic Farming (ITAB) for example was created in 1983 by the organic movement and started trial activities in the 1990s.

The National Institute for Agricultural Research (INRA) has been quite reluctant for a long time to commit itself to a research programme. However, the recent political recognition of organic farming has prompted various organisations to draw up official policies to promote it. In France, this shift can be dated December 1997, when a medium-term plan for the development of organic farming was introduced. INRA announced its commitment to a research programme in January 2000, while emphasizing the need to comply with the rules governing all research activity. The Union of the Technical Institutes for Agriculture (ACTA) which is in charge of applied research in agriculture, encouraged its members, the 18 product oriented institutes, to devote some means to research and trials in the area of organic farming. In 2000, the Directorate for Teaching and Research (DGER) within the Ministry of Agriculture and Fisheries was asked to set up a specific committee in charge of coordinating the activities of ITAB, INRA and ACTA.

3 Organisation of the Research Programmes

As mentioned above, various funding bodies are concerned with organic farming.

Table 1: The main agricultural research programmes specialized on or related to organic farming

	2000 – 2003	2004 – 2007
Ministry of Agriculture and Fisheries	INRA-ACTA ² : Organic Farming programme Agribio I INRA research on regional development (INRA PDSR)	INRA-ACTA-ACTIA ³ : Organic Farming programm Agribio II ADAR ⁴ call for proposals
Ministry of Research	AQS ⁵	RARE ⁶
Regional funding	Contrats de Plan Etat – Régions: Regionally funded research; organic farming projects/programmes in Brittany, the South East and South West of France and the Massif Central.	

² ACTA: Union of the Technical Institutes for Agriculture

³ ACTIA: Union of the Technical Institutes for Food Processing, <http://www.actia.asso.fr>

⁴ Agence pour le Développement Agricole et Rural / National Agency for Agricultural and Rural Development (ADAR), <http://www.adar.gouv.fr/>

⁵ AQS: Aliment Qualité Sécurité (Food, Quality and Safety), replaced in 2003 by RARE

⁶ RARE: Réseau Agro-alimentaire Recherche Europe (Network Agri-Food Research Europe)

The main programmes devoted to research on organic farming are the “INRA Organic Farming” Programmes Agribio I and Agribio II, managed by the Ministry of Agriculture and Fisheries with the participation of the National Institute for Agricultural Research (INRA), the Technical Institute of Organic Agriculture (ITAB), the Union of the Technical Institutes for Agriculture (ACTA) and the Union of the Technical Institutes for Food Processing (ACTIA). The overall organisation appears in the following chart.

Important note

It is very important to remember that project funding for research institutes and universities never includes public salaries. In this case, the funding mentioned here concerns only additional costs (sometimes including researchers receiving salaries on fixed term contracts). On the other hand, technical institutes are funded for the additional costs of the project, supplemented with 50 % of their public salaries and 100 % for researchers receiving salaries on fixed term contracts. Private institutes are entirely funded for all salaries and additional costs. “Additional funding” therefore refers to the money which is actually paid to the institution. In order to assess the global costs (including salaries and social security contribution) of any project, the following average rates will be implemented (see table below).

Table 2: Rates to estimate the total research costs

Types of research institutions	Rate
INRA, CEMAGREF ⁷ , INSERM ⁸ , CNRS ⁹ , Universities	Additional funding * 4
Technical institutes (ITAB and other institutes)	Additional funding * 2
Private agencies	Additional funding * 1

⁷ Institut de recherche pour l'ingénierie de l'agriculture et de l'environnement / Agricultural and environmental engineering research (CEMAGREF), F- F 92163 Antony, <http://www.cemagref.fr>

⁸ Institut national de la santé et de la recherche médicale / National Institute of Health and Medicinal Research (INSERM), F- 75654 Paris, <http://www.inserm.fr/>

⁹ National Centre for Scientific Research (CNRS)

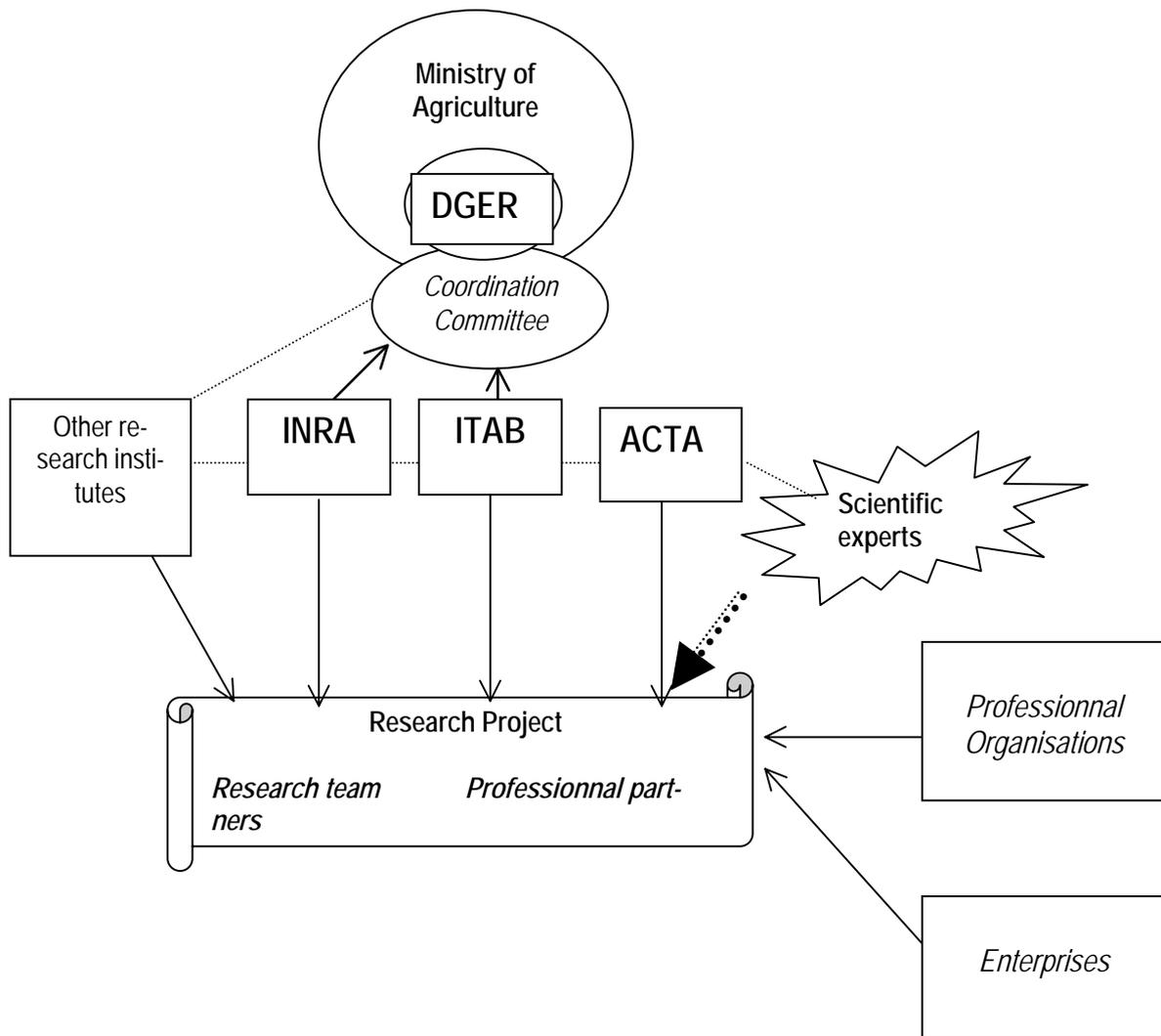


Figure 1: Organisation of the research programme on organic farming

4 Mapping Research Programmes

The National Institute for Agricultural Research (INRA) pursues an all-round approach combining cross-disciplinary and partnership-based research. It views organic farming as a model for sustainable agriculture. This starting point allows for analytical research while also reinforcing the systemic approach. It leads to an understanding of the processes involved in farming to meet strict production standards and should, in the long term, yield innovative solutions. A further challenge is to understand the societal needs related to organic farming and to analyze and rank them by importance, be it in terms of production, processing, or control of the outputs of organic farming (product quality, ecological balance, environmental impact, macro-economic optimization, etc.).

The task of the INRA's Internal Committee on Organic Farming (CIAB)¹⁰ is to develop a research programme (through the organisation of an in-house invitation-to-tender under the applicable regulations) with the objectives:

- 1) *to better understand organic farming* (through the compilation of a database of scientific reference works with links to other databases),
- 2) *to hold scientific seminars in order to transfer and discuss the research results. CIAB organises conferences on specific topics in association with organic farming organisations and with the participation of INRA and non-INRA scientists and practitioners¹¹*, and
- 3) *to develop a research programme.*

These objectives have to be achieved on three scientific fields (see table 3, which shows both the objectives and scientific fields). The aim of the research programme is to identify motivated in-house teams and to build a network that is both consistent and reliable in terms of sharing information, defining objectives and methods, providing research incentives, and evaluating and transferring results.

Table 3: The research programme objectives

	Objectives		
Fields of research	To better understand organic farming	To transfer and discuss scientific results	To develop new projects
Production	Production rules	Extension	Explanation
Production systems	How to combine objectives	Methodology and tools	Conversion of new systems to organic farming
Economics	Statistics	Supply chains Demand	Organic Marketing Initiatives

The basic principles of partnership-based research require that programmes are developed in conjunction with practitioners. Thus, the Teaching and Research Department (DGER) of the Ministry of Agriculture and Fisheries set up a co-ordination platform with the National Institute for Agricultural Research (INRA), the Union of the Technical Institutes for Agriculture (ACTA) and the Technical Institute of Organic Agriculture (ITAB)¹². This Platform group is to support DGER in coordinating programmes on research, development, and education.

4.1 National Programme 2000 - 2003

4.1.1 Programme "Agribio I" (INRA and ACTA)

Agribio I was a joint programme of the National Institute for Agricultural Research (INRA) and the Union of the Technical Institutes for Agriculture (ACTA). The total national costs were approximately € 34 million. All projects carried out under this programme are listed in annex 1. The breakdown according to subject areas is as follows:

¹⁰ Comité Interne pour l'Agriculture Biologique / Internal Committee for Organic Agriculture at INRA (CIAB), F- 31 326 Castanet Tolosan, <http://www.inra.fr/ciab>

¹¹ The subjects covered in 2000-2002 dealt with crop protection and organic farming, genetic resources and organic farming, animal health and organic farming, assessment of techniques used in breeding.

¹² Institut Technique de l'Agriculture Biologique / Technical Institute of Organic Agriculture (ITAB), F- 75595 Paris, <http://www.itab.asso.fr/>

Table 4: Agribio I – Budget according to subject areas (2000-2003)

Subject Areas	Projects ¹³	National Targeted funding amount (in €1,000)	National total costs (in €1,000)
1 - Farming systems	AB1-10	5	568
2 - Animal husbandry	AB1-3, AB1-15,	244	1,641
3 - Crop husbandry	AB1-1, AB1-2, AB1-5, AB1-6, AB1-9, AB1-11, AB1-13, AB1-14, AB1-16, AB1-17, AB1-18, AB1-19	586	30,952
4 – Soil			
5 - Environmental aspects	AB1-7, AB1-12	17	452
6 - Food systems	AB1-8	8	188
7 – Value, standards and certification	AB1-4	11	71
8 – Knowledge management			
Total			34,000

This programme involved approximately 166 research engineers and scientists corresponding to approximately 1,432.9 person months. The researchers belong to 13 different institutes.

- Involved research institutes and school of higher education: CEMAGREF¹⁴, CIRAD¹⁵, ENITA¹⁶, INAPG¹⁷, INRA¹⁸, ISARA¹⁹
- Involved technical institutes: CETIOM²⁰, CTIFL²¹, ITAB²², ITV²³
- Involved development bodies: CIVAM BIO²⁴, GIS-GEPAB²⁵, GRAB²⁶

13 For project list see annex 1.

14 Institut de recherche pour l'ingénierie de l'agriculture et de l'environnement / Agricultural and environmental engineering research (CEMAGREF), F- F 92163 Antony, <http://www.cemagref.fr>

15 La recherche agronomique au service des pays du Sud / French Agricultural Research Centre for International Development (CIRAD), F-75116 Paris, <http://www.cirad.fr>

16 Ecole nationale d'ingénieurs des travaux agricoles (ENITA)) Site de Marmilhat - BP 35 - 63370 Lempdes <http://www.enitac.fr/>

17 Institut national agronomique Paris-Grignon (INAPG), FR- 75231 Paris, <http://www.inapg.fr>

18 Institute National de Recherche Agronomique / National Institute for Agricultural Research (INRA), F- 75338 Paris, <http://www.inra.fr/>

19 Institut supérieur d'agriculture (ISARA), F- 69288 Lyon, <http://www.isara.fr>

20 Centre Technique Interprofessionnel des Oléagineux Métropolitains / The Technical Center for Oilseed Crops (CETIOM), F- 78850 Thiverval-Grignon, <http://www.cetiom.fr/>

21 Centre Technique Interprofessionnel des Fruits et Légumes, F- 75009 Paris, www.ctifl.fr

22 Institut Technique de l'Agriculture Biologique (ITAB), F- 75595 Paris, <http://www.itab.asso.fr/>

23 Centre Technique Interprofessionnel de la Vigne et du Vin (ITV France), F-Paris, <http://www.itvfrance.com>

24 Fédération Nationale des Centres d'Initiatives pour Valoriser l'Agriculture et le Milieu rural FNCIVAM

25 Groupe d'Etudes Pluridisciplinaires en AB GIS GEPAB

26 Groupe de Recherche en Agriculture Biologique / Research Group on Organic Agriculture (GRAB), F- 84 911 Avignon, <http://grab.agriculturebio.org/>

4.1.2 Programme “INRA – PSDR”(Research for and on Regional Development) not exclusively organic

The programme INRA - PSDR focused on regional development and is not exclusively devoted to organic farming. The total national costs were approximately € 1.9 million. A complete project list is available in Annex 1. The breakdown by subject areas is as follows:

Table 5: INRA-PSDR – Budget according to subject areas (2000-2004)

Areas	Projects ²⁷	National Targeted funding amount (in € 1,000)	National Total costs (in € 1,000)
6 Food systems	1, 2	588	1,907
Total			1,907

This program involves approximately twelve research scientists corresponding to approximately 176 person-months. The researchers belong to eight different institutes:

- Research institutes and schools of higher education: INRA, ENITIA²⁸, University of Nantes, Ecole supérieure d’agriculture d’Angers
- Development bodies: GRET²⁹, CAB pays de la Loire, InterBio Pays de la Loire, Regional Chamber of Agriculture

4.1.3 Programme “ACTA” (Without INRA contribution)

The total national costs of the programme of the Union of the Technical Institutes for Agriculture (ACTA), running 2000 to 2004, were approximately € 1.4 million. A full project list is available in Annex 1. The breakdown by subject areas is as follows:

Table 6: Budget according to subject areas (2000-2004)

Areas	Projects ³⁰	National Targeted funding amount (in € 1,000)	National total costs (in € 1,000)
2 Animal husbandry	ACTA-2	208	613
3 Crop husbandry	ACTA-1, ACTA-3, ACTA-4	175	767
Total			1 400

This programme involved approximately 143 research scientists corresponding to approximately 31 person-months.

²⁷ For project list see annex.

²⁸ Ecole nationale d'ingénieurs des travaux agricoles (ENITA) Site de Marmilhat - BP 35 - 63370 Lempdes, <http://www.enitac.fr/>

²⁹ Groupe de recherche et d'échanges technologiques / Group for Research and Technology Exchange (GRET), F-75010 Paris, <http://www.gret.org/>

³⁰ For project details please see annex 1.

4.1.4 Ministry of Research: “AQS program” (not totally devoted to organic farming)

The total costs of the Ministry’s for the Research programme on Food, Quality and Safety (Aliment-Qualité-Sécurité AQS) amounted to approximately € 0.58 million. This programme was not exclusively devoted to organic agriculture. A complete project list is available in annex 2. The breakdown according to subject areas is available in the table below.

Table 7: Budget of the AQS programme 2000 – 2004 according to subject areas

Areas	Projects ³¹	National targeted funding amount (in €1,000)	National total costs (in €1,000)
6 Food systems	AQS-1,AQS- 2	171	576
Total			576

These programmes involved approximately 54 scientists corresponding to approximately 54 person months. The researchers belong to nine different institutes:

- Research institutes and schools of higher education: INRA³²
- Sector organisations: FNAB³³, Biocoop³⁴, Secodip³⁵, Agence Bio³⁶
- Development bodies: GRET³⁷, CAB Pays de la Loire, InterBio Pays de la Loire, Chambre régionale d’agriculture

4.2 National Programme 2004 – 2007

4.2.1 Programme Agribio II

The organic farming programme Agribio II is carried out by the National Institute for Agricultural Research (INRA), the Union of the Technical Institutes for Agriculture (ACTA) and the Union of the Technical Institutes for Food Processing (ACTIA). The total national costs are approximately € 7.4 million. The projects are listed in Annex 1. The breakdown by subject areas is as follows:

³¹ For project details please see annex 1.

³² Institute National de Recherche Agronomique / National Institute for Agricultural Research (INRA), F- 75338 Paris, <http://www.inra.fr>

³³ Fédération Nationale d’Agriculture Biologique / National Federation of Organic Farming (FNAB), F-75011 Paris, <http://www.fnab.org/>

³⁴ Biocoop - Premier réseau des magazines bio en France / Network of Organic Shops in France, F-92220 Bagneux, <http://www.biocoop.fr/>

³⁵ Secodip, TNS World Panel, F-Chambourcy, <http://www.secodip.fr>

³⁶ Agence Bio / Agency for Organic Food and Farming, F-93100 Montreuil sous Bois, <http://www.agencebio.fr>

³⁷ Groupe de recherche et d’échanges technologiques / Group for Research and Technology Exchange (GRET), F-75010 Paris, <http://www.gret.org/>

Table 8: Budget of the Programme Agribio II according to subject areas

Areas	Projects ³⁸	Targeted funding amount (in € 1,000)	National total costs (in € 1,000)
1 Farming systems	AB2-4	96	1,213
2 Animal husbandry	AB2-9	13	253
3 Crop husbandry	AB2-2, AB2-3, AB2-6, AB2-7	278	4,082
5 Environmental aspects	AB2-5	118	523
6 Food systems	AB2-1, AB2-8	232	1,365
Total			7,400

This programme involved approximately 141 research scientists corresponding to approximately 890.2 person-months. The researchers came from 28 different institutes.

- Research institute and schools of higher education: CIRAD³⁹, ENITA⁴⁰, ENITIAA⁴¹, INRA⁴², ISARA⁴³
- Technical institutes ARVALIS⁴⁴, AERIAL⁴⁵, CTCPA⁴⁶, CTIFL⁴⁷, IE⁴⁸, ITAB⁴⁹
- Development organisations: Chamber of Agriculture, CREAB⁵⁰, GRAB⁵¹, IBB⁵², GIS BIO Massif Central⁵³

38 For project details please see annex 1.

39 La recherche agronomique au service des pays du Sud / French Agricultural Research Centre for International Development (CIRAD), F-75116 Paris, <http://www.cirad.fr>

40 Ecole nationale d'ingénieurs des travaux agricoles (ENITA) Site de Marmilhat - BP 35 - 63370 Lempdes <http://www.enitac.fr/>

41 Ecole nationale d'ingénieurs des techniques des Industries agricoles et alimentaires (ENITIAA) Rue de la géraudière, 44322 Nantes Cedex 3. <http://www.enitiaa-nantes.fr/>

42 Institute National de Recherche Agronomique / National Institute for Agricultural Research (INRA), F- 75338 Paris, <http://www.inra.fr/>

43 Institut supérieur d'agriculture (ISARA), F- 69288 Lyon, <http://www.isara.fr>

44 ARVALIS-Institut du végétal / Technical Institute for Cereals and Forage, F-75116 Paris, <http://www.arvalisinstitutduvegetal.fr/fr/contact.asp>

45 Technology Ressource Centrre (applied research programs on food irradiation) rue Laurent Fries - Parc d'Innovation, 67400 Illkirch –FRANCE <http://www.aerial-crt.com/>

46 Centre Technique de la Conservation des Produits Agricoles / Technical Centre for the preservation of agricultural products (CTCPA), F-75682 Paris, <http://www.ctcpa.org/>

47 Centre Technique Interprofessionnel des Fruits et Légumes, F- 75009 Paris, www.ctifl.fr

48 Institut de l'élevage (IE), 149 rue de Bercy, Paris, www.inst-elevage.asso.fr/

49 Institut Technique de l'Agriculture Biologique (ITAB), F- 75595 Paris, <http://www.itab.asso.fr/>

50 Centre Régional de Recherche et d'Experimentation en agriculture biologique, Route de Mirande 32 020 AUCH cedex 09 <http://orgprints.org/6745/>

51 Groupe de Recherche en Agriculture Biologique / Research Group on Organic Agriculture, (GRAB), F- 84 911 Avignon, <http://grab.agriculturebio.org/>

52 INTER BIO BRETAGNE (IBB) unites the organic sector in the region of Bretagne, <http://www.interbiobretagne.asso.fr/>,

53 Pôle scientifique Agriculture biologique Massif Central / Coordination of organic Farming research in the Massif Central (GIS BIO Massif Central) , F- 43 100 Fontannes, <http://www.itab.asso.fr/PoleABMassifCentral.htm>

4.2.2 Programme “ADAR”

The programme of the National Agency for Agricultural and Rural Development (ADAR) was carried out in 2005 (not exclusively organic). The total national costs are approximately € 1.9 million. The complete project list is available in annex 1. Please find the breakdown by subject areas below:

Table 9: Budget of the ADAR programme according to subject areas

Areas	Funding 2005	National Targeted funding amount (in € 1,000)	National total costs (in € 1,000)
3 Crop husbandry	ADAR-3	69	302
4 Soil	ADAR-2	298	883
6 Food systems	ADAR-1	249	736
Total			1,900

This programme involved approximately 15 research engineers and scientists corresponding to approximately 174 person-months. The researchers and engineers belong to 21 different institutes.

- -Research institute and schools of higher education: INRA⁵⁴, INSERM⁵⁵, ESA Angers⁵⁶, ISARA⁵⁷, University of Reims⁵⁸, CIHEAM-IAMM⁵⁹
- Technical institutes: ARVALIS⁶⁰, CTIFL⁶¹, GRAB⁶², ITV⁶³
- -Development bodies: Chambers of Agriculture, ITAB⁶⁴, CIVAM⁶⁵, CNRAB⁶⁶, GIS BIO Massif Central⁶⁷, ADABio⁶⁸, CREAB⁶⁹

⁵⁴ Institute National de Recherche Agronomique / National Institute for Agricultural Research (INRA), F- 75338 Paris, <http://www.inra.fr/>

⁵⁵ Institut national de la santé et de la recherche médicale / National Institute of Health and Medicinal Research (INSERM), F- 75654 Paris, <http://www.inserm.fr/>

⁵⁶ Ecole Supérieure d'Agriculture d'Angers / Agricultural University College Angers (Groupe ESA), F-49007 Angers, <http://www.groupe-esa.com/>

⁵⁷ Institut supérieur d'agriculture (ISARA), F- 69288 Lyon, <http://www.isara.fr>

⁵⁸ Université de Reims Champagne-Ardenne / University of Reims, <http://www.univ-reims.fr/>

⁵⁹ Institut Agronomique Méditerranéen de Montpellier / Mediterranean Agricultural Institute of Montpellier (CIHEAM-IAMM), F-34093 Montpellier, <http://www.iamm.fr/>

⁶⁰ ARVALIS-Institut du végétal / Technical Institute for Cereals and Forage, F-75116 Paris, <http://www.arvalisinstitutduvegetal.fr/fr/contact.asp>

⁶¹ Centre Technique Interprofessionnel des Fruits et Légumes, F- 75009 Paris, www.ctifl.fr

⁶² Groupe de Recherche en Agriculture Biologique / Research Group on Organic Agriculture, (GRAB), F- 84 911 Avignon, <http://grab.agriculturebio.org/>

⁶³ Centre Technique Interprofessionnel de la Vigne et du Vin (ITV France), F-Paris, <http://www.itvfrance.com>

⁶⁴ Institut Technique de l'Agriculture Biologique (ITAB), F- 75595 Paris, <http://www.itab.asso.fr/>

⁶⁵ Fédération Nationale des Centres d'Initiatives pour Valoriser l'Agriculture et le Milieu rural FNCIVAM

⁶⁶ Centre National de Ressources en Agriculture Biologique / National Resource Centre (for organic farming, CNRAB), F - 63370 Lempdes, <http://www.agribio.com/>

⁶⁷ Pôle scientifique Agriculture biologique Massif Central / Coordination of organic Farming research in the Massif Central (GIS BIO Massif Central), F- 43 100 Fontannes, <http://www.itab.asso.fr/PoleABMassifCentral.htm>

⁶⁸ Association de Producteurs pour le Développement de l'Agriculture Biologique dans l'Ain, l'Isère, la Savoie et la Haute-Savoie // Producer Association for the Development of Organic Farming ADABIO, F- 38036 Grenoble, <http://www.adabio.com/>

⁶⁹ Centre Régional de Recherche et d'Experimentation en agriculture biologique, Route de Mirande, 32 020 AUCH cedex 09, <http://orgprints.org/6745/>

4.2.3 Ministry of Research: “RARE programme”

The programme Network Agri-Food Research Europe (RARE: Réseau Agro-alimentaire Recherche Europe) did not exclusively deal with organic farming. The total national costs are approximately € 0.32 million. The projects are listed in Annex 1. The breakdown by subject areas is as follows:

Table 10: Budget distributed at subject areas (2000-2004)

Areas	Projects ⁷⁰	Targeted funding amount (in € 1,000)	National total costs (in € 1,000)
6 Food systems	RARE	53	323
Total			323

These programmes involved approximately four research scientists corresponding to approximately 36 person months. The researchers belong to six different institutes:

- Research institute and school of higher education: National Institute for Agricultural Research (INRA)
- Professional and expertise organisms: FNAB⁷¹, Biocoop⁷², Secodip⁷³, Agence Bio⁷⁴, SYNABIO⁷⁵
- Development body: GRET⁷⁶

4.3 Regional Programmes 2000 - 2003

This listing of regional programmes for organic farming is not exhaustive.

4.3.1 Pôle Bio Massif Central Programme

The total costs for organic farming research in the Massif Central Region, carried out by the Pôle Bio Massif Central, the regional coordination body of organic farming research, were approximately € 1.7 million in the period 2000-2003. The projects are listed in Annex 1. The breakdown by subject areas is as follows:

⁷⁰ For project details please see annex 1.

⁷¹ Fédération Nationale d'Agriculture Biologique / National Federation of Organic Farming (FNAB), F-75011 Paris, <http://www.fnab.org/>

⁷² Biocoop - Premier réseau des magazines bio en France / Network of Organic Shops in France, F-92220 Bagneux, <http://www.biocoop.fr/>

⁷³ Secodip, TNS World Panel, F-Chambourcy, <http://www.secodip.fr>

⁷⁴ Agence Bio / Agency for Organic Food and Farming, F-93100 Montreuil sous Bois, <http://www.agencebio.fr>

⁷⁵ SYndicat NAtional des transformateurs de produits naturels et de culture BIOlogique / National association of processors of organic food, F-75003 Paris, <http://www.synabio.com>

⁷⁶ Groupe de recherche et d'échanges technologiques / Group for Research and Technology Exchange (GRET), F-75010 Paris, <http://www.gret.org/>

Table 11: Budget according to at subject areas, Regional Programme Pôle Bio Massif Central 2000-2003

Areas	Projects ⁷⁷	Total costs (in € 1,000)
1 Farming systems	4, 6, 7, 14	665
2 Animal husbandry	1, 2, 3, 5, 8, 9	270
3 Crop husbandry	10, 11, 12, 13	562
8 Knowledge management	15	193
Total		1,700

4.3.2 GRAB-Programme

The total regional costs for the research carried out by Research Group on Organic Agriculture (GRAB⁷⁸) were approximately € 2.4 millions for the period 2000 - 2003. The project list appears in Annex 1. The breakdown by subject areas is as follows:

Table 12: Budget according to subject areas, Regional Programme GRAB 2000-2003

Areas	Projects ⁷⁹	Total costs (in € 1,000)
1 Farming systems		484
3 Crop husbandry	1 to 20	1,138
4 Soil	21, 22	242
5 Environmental aspects	23, 24, 25	112
8 Knowledge management	26 to 31	484
Total		2,400

4.4 Regional Programmes 2004 - 2006

The listing of regional programmes related to organic farming research 2004 to 2006 is not exhaustive.

4.4.1 Pôle Bio Massif Central

The total regional costs in the massif Central Region are approximately € 1 million. The project list is available in annex 1. The breakdown by subject areas is as follows:

⁷⁷ For project list see annex 1.

⁷⁸ Groupe de Recherche en Agriculture Biologique / Research Group on Organic Agriculture (GRAB), F- 84 911 Avignon, <http://grab.agriculturebio.org/>

⁷⁹ For project list see annex 1.

Table 13: Budget according to subject areas, Regional Programme Pôle Bio Massif Central 2004-2005

Areas	Projects ⁸⁰	Total costs (in €1,000)
1 Farming systems	4, 6, 7, 14	491
2 Animal husbandry	1,2,3,5 ,8,9	170
3 Crop husbandry	10, 11,12, 13,	240
8 Knowledge management	15	123
Total		1,000

4.4.2 GRAB Programme

The total regional costs for the research carried out by the Research Group on Organic Agriculture (GRAB⁸¹) are approximately 2.5 millions for this period. The listing of the projects appears in Annex 1. The breakdown according to subject areas is as follows:

Table 14: Budget according to at subject areas, GRAB Programme, 2004-2006

Areas	Projects	Total costs (in € 1000)
1 Farming systems		490
3 Crop husbandry	1 to 20	952
4 Soil	21, 22	245
5 Environmental aspects	23, 24, 25	245
8 Knowledge management	26 to 31	490
Total		2,500

5 Financing

For information about the financing see Annex 2 distribution of budgets per year and per theme.

6 Research Facilities

In the following chapters some research facilities available to organic farming research are listed. The list is not exhaustive.

6.1 Organic fruit tree production trials

Long-term organic fruit tree production trials have been carried out since 1994 at the Gotheron experimental station of National Institute for Agricultural Research (INRA). The aims are:

- (i) to identify and analyse the key problems (mainly related to pest control and soil fertility) for two perennial crops, apple and peach; and

⁸⁰ For project list see annex 1.

⁸¹ Groupe de Recherche en Agriculture Biologique / Research Group on Organic Agriculture (GRAB), F- 84 911 Avignon, <http://grab.agriculturebio.org/>

- (ii) to assess the effect of organic production in the orchard on its arthropod community.

Organic orchards now cover 3.2 hectares of the experimental station.

The measurements concern tree growth, soil nutrients, yield and the fruit quality (sugar, acidity, average weight, mineral contents).

6.2 Organic research farms

6.2.1 Platform on organic sheep production at the National Institute for Agricultural Research (INRA)

The organic research platform for sheep production was set up in 1999. The research takes place at three sites:

- 1) The Farm of Redon (INRA Centre of Theix⁸² in the Region Auvergne, altitude 800 m) has been converted to organic farming since January 2002. There are 200 ewes (Limousine breed) producing 320 lambs a year and 30 red deer. 90 hectares are available for research, of these 2.5 hectares for crops. There are sheds and barns for the sheep but the deer stay outside during the winter. The research takes a systemic approach, comparing two reproduction systems (one lambing per year, half of them in spring, the others in autumn versus three lambings in two years). Research themes include performance regarding reproduction or lamb growing. Further themes are fodder production, animal health, economic results, quality of products and environmental aspects. The work is carried out in cooperation with three farms and three agricultural schools (in three departments of the Massif Central). On average each farm has 70 hectares and 300 ewes.
- 2) At the INRA experimental farm at Orcival (Unité Experimentale Les Monts Dore, also in the Auvergne⁸³; altitude between 1,000 and 1,480 m) 14 hectares and 100 ewes are devoted to organic farming trials. The total – conventional - area available to this experiment farm is 680 hectares. It has also 110 dairy cows and 140 suckler cows managed conventionally. The organic research programme is devoted to the study of the quality of the products, comparing 50 ewes managed organically (9 hectares) with 50 ewes (6.4 hectares) managed the conventional way. It was not possible to certify the 9 hectares used by the organic flock because of the conventional comparison flock compared. This project started in the year 2000. The main results should be available in 2005 and 2006.
- 3) A monitoring network of farms was set up in 1988. In 2004, this network consisted of 18 organic and 31 conventional farms, some of them located in the plains, some located in the mountains. The aim is to compare (in a long term study) the structures, the functioning and the technical and economic performances of the farms. The data for organic farms are obtained by INRA in collaboration with partners around the Massif Central. These activities are coordinated by the Centre of organic farming in the Massif Central (Pôle Agriculture Biologique Massif Central). There is, in the same INRA team, an equivalent network of farms dealing with suckler cow production (80 conventional farms and six organic and other organic farms in relation with other partners).

6.2.2 Organic research farm on the conception, the management and the evaluation of more sustainable mixed farming systems at INRA

At Mirecourt in the East of France, the INRA organic research farm conducts research on the conception, the management and the evaluation of more sustainable mixed farming systems. The

⁸² <http://www.clermont.inra.fr/internet/unitesducentre/listeunites.htm>

⁸³ <http://www.clermont.inra.fr/internet/unitesducentre/ueorcival.htm>

farm covers 225 hectares, and its stock comprises 100 dairy cows with. Two different farming systems are studied, and the research station operates as two model farms: (i) 40 dairy cows on 75 hectares of permanent sward and (ii) 60 dairy cows with 55 hectares of permanent sward and 95 hectares for two crop rotations with different proportions of legumes, cereals, temporary sward and cash crops. (Start of the conversion period 2004, end of the conversion period 2007).

6.2.3 Organic research farms with organic crop and animal production at agricultural colleges

Several farms of agricultural colleges have organic crop and animal production. Most of them have partnerships with research institutes. Three research structures develop programmes on these farms:

- The scientific organic centre of the region Massif Central (Pôle Agriculture Biologique Massif Central) has at its disposition the farms of Bioude, Sainte Affrique and Rochefort Montagne's college (average 70 ha and 300 ewes, year of conversion, 2002 (Rochefort), 1998 (Brioude), 1976 (Saint-Affrique). See above “Organic farming sheep production platform at INRA” for more details).
- The organic platform of Inter Bio Bretagne (inter professional and regional organisation) is based at the agricultural farm of the agricultural college of Suscinio Morlaix. Six hectares are devoted to experimentations concerning screening and evaluation of vegetables varieties.
- The Regional Center of research and experimentation in organic farming in the Midi-Pyrénées, the South West of France CREAB⁸⁴, is based at the agriculture college of Auch Beaulieu. A part of the 55-hectare farm has been converted to organic farming since 1999. The trials include screening of varieties, testing organic manure on soft wheat, testing crop rotations, studying mechanical weed control, characterizing nitrogen leaching after leguminous plants, evolution of the fertility of the farm since its conversion. CREAB⁸⁵ is affiliated to the Technical Institute of Organic Agriculture (ITAB) which is specialized in arable crops. CREAB is an association, whose members include interest groups of organic farmers, economic organisations, chambers of agriculture, technical institutes and agricultural schools. The scientific partners are INRA and several Agricultural Technical Institutes. Farmers are partners.

6.2.4 Organic research farm on bovine meat production at the chamber of agriculture

Two other organic experimental farms are devoted to bovine meat production. The aim of these two farms is to work out reliable technical references.

The farm of Bordes (Departement of Indre) is associated to the Technical Institute for Crops and Forage ARVALIS⁸⁶ and to four local chambers of agriculture (Departements Indre, Cher, Creuse, Haute-Vienne). One of the two fields of the farm was converted to organic farming in 1998. There are about 60 limousine cows on 116 hectares. The farm of Thorigne (departement Maine-et-Loire) was initiated in 1998 by the chamber of agriculture of Maine-et-Loire. It has 54 hectares divided into two sites and 23 limousines cows.

⁸⁴ Centre Régional de Recherche et d'Experimentation en agriculture biologique, Route de Mirande, 020 AUCH cedex 09, [tp://orgprints.org/6745/](http://orgprints.org/6745/)

⁸⁶ ARVALIS-Institut du végétal / Technical Institute for Cereals and Forage, F-75116 Paris, <http://www.arvalisinstitutduvegetal.fr/fr/contact.asp>

7 Initiation of Research and Stakeholder Engagement

Within the Ministry of Agriculture and Fisheries, the Teaching and Research Department (DGER) is in charge of the national programme on organic farming. The priorities are set on the basis of a survey carried out at the National Institute for Agricultural Research (INRA) and the Technical Institute of Organic Agriculture (ITAB).

The INRA priorities are based on proposals from research teams and institutions. The results of the survey were discussed at scientific seminars held in 2000 and 2003, of which the proceedings were published. Research gaps are identified, and may concern topics which cannot be covered by the present teams within INRA. The final proposal is elaborated by INRA's Internal Committee on Organic Farming (CIAB) and then submitted to the committee of the Teaching and Research Department (DGER) of the Ministry of Agriculture and Fisheries.

The ITAB survey is carried out by investigating the expectations of professionals, gathered in the technical committees and members (regional committees). ITAB's governing board elaborates the final proposal and submits it to DGER.

8 Selection Criteria and Evaluation Procedures

The procedure described above is applied in principle each third year. The following steps are applied.

Table 15: Time table for evaluation procedures of the projects (each third year)

	DGER's ⁸⁷ coordination committee	ITAB ⁸⁸	INRA ⁸⁹ -CIAB ⁹⁰	ACTA ⁹¹
Fall (year n-1)		Compilation of the expectations of the professionals/ organic sector	Compilation of research needs from the researchers' points of view	Working out the research needs from the researchers' points of views
Mid January	Summing up the proposals, discussion and decision			
15 January			Call (Deadline 08/03) for Expressions of Interest (EoI)	
15 January– 8 March	Teams elaborate and submit their EoI			
8 March			The EoI are received and forwarded to the DGER's committee	

⁸⁷ Teaching and Research Department (DGER) of the Ministry of Agriculture and Fisheries.

⁸⁸ Technical Institute of Organic Agriculture (ITAB)

⁸⁹ National Institute for Agricultural Research (INRA)

⁹⁰ INRA's Internal Committee on Organic Farming (CIAB)

⁹¹ Union of the Technical Institutes for Agriculture (ACTA)

Mid March			Scientific experts appointed by INRA; EoI sent to the experts	
End of April	Assessments received by the DGER committee	Following up committees (researchers and professionals) are set up Professional expertise (according to the expectations)	Expert assessments are received back CIAB meeting: working out of the scientific assessment and proposals	Assessments received by the ACTA committee, which produces its own assessment
Beginning of May	General meeting DGER / Professional organisations (ITAB and others)			
Beginning of May	DGER committee proposals validated: organisation of scientific seminars, with full projects to be sent by mid September			
Mid May – end of June	Scientific seminars			
Summer	Full projects to be produced			
Mid September			Full Projects to be received	
30 September			CIAB committee appoints experts	ACTA committee appoints experts
End October			CIAB committee: assessment of the projects	
Beginning of November				ACTA committee: assessment of the projects
End of November	DGER committee takes the decision			
December				ACTA scientific committee (for the overall programme) takes the decision
Beginning of January	Selected projects start			

On the basis of the national call for offers issued each third year, the research teams apply with an expression of interest.

Project assessment criteria

Table 16: Project assessment criteria

Main criteria	Specific questions
1. Scientific quality of the project	Quality of the literature analysis Are the objectives clear, well argued Is the methodology satisfactory? Is the project innovative?
2. Relevance of the project :	Is the project in the framework of the call for proposals? Is it well adapted to the professionals' expectations? Quality of the partnership (are the stakeholders active and diversified) Can the goals be reached within the duration of the project?
3. Quality of the project's management	Consistency between the goals and the technical / financial means devoted to the project Relevance of the planning Organisation of the project / breakdown of the work
4. Financial assessment	Are the expected means realistic according to the goals and methods
5. Overall assessment	Strengths and weaknesses of the project

9 Utilisation of Research

In the majority of cases, the dissemination of research towards the professionals (farmers, producers, advisors, professional organisations, technical institutes) is done directly by partnerships between both, researchers and professionals.

At the same time, dissemination can be done by other ways:

- Written support
 - Publications in traditional reviews or technical reviews
 - Synthesis of results and attractive leaflets
- Meetings
 - Seminars and conferences
 - National or regional technical days
 - Visits of sites (farm walks)
 - Through the specific activities of different organisations:
 - Associations: Inter Bio Bretagne (IBB) which unites the organic sector in Brittany or the regional Federation of organic farmers of Bretagne (FRAB)
 - Technical institutes: ITAB (Technical Institute of Organic Agriculture)

10 Scientific Education and Research Schools

There are different types and levels of education and training in France.

10.1 Education and training in agricultural colleges and high schools

Sixty agricultural colleges and schools of higher education are involved in different levels of professional training in organic farming. These schools are organized in a network called FORMABIO. The majority of these schools are under the auspices of the Ministry of Agriculture and Fisheries; some of them are private. 60% of these schools are involved in the training of adults, 40% in the education of young people.

They issue several types of diplomas / professional certificates: the **baccalauréat** (BAC: equivalent to the leaving certificate). The higher diploma is the “BTSA”, a higher national diploma specialized in agriculture and environmental studies.

These diplomas are generally not specific in organic farming. These trainings lead to the profession of (higher) technicians in agriculture.

10.2 Engineering schools

Several agricultural engineering schools are involved in organic farming training. Some of them such as ESA (Angers), ISA (Lille), ISARA (Lyon)⁹² and ESAP (Purpan) are private, others such as ESIPTA (higher school for engineers and technicians in agriculture), several ENSA⁹³ and ENITA⁹⁴ and ENITA (Engineering schools for Agriculture), the INA-PG (National Institute of Agronomy), Paris, are directly linked to the Ministry of Agriculture and Fisheries. Most of them offer specific courses about organic farming. ISARA has a teaching unit specialized in organic farming. These schools have the Master Degree in Engineering that leads to the profession of agricultural engineers. These diplomas are not specific to organic farming.

10.3 Training for professionals

Professional training is carried out at agricultural colleges and engineering schools. Such training is also offered by specific professional and training organisations such as the Research Group on Organic Agriculture (GRAB), BIOCIVAM, the Union of Private Training Schools UNMFREO, the French network of specialised organic food shops BIOCOOP, the National Federation of Organic Farming FNAB⁹⁵ and APCA (councils for farmers).

⁹² Institut supérieur d'agriculture (ISARA), F- 69288 Lyon, <http://www.isara.fr>

⁹³ Ecole Nationale Supérieure Agronomique, several locations in France.

⁹⁴ Ecole nationale d'ingénieurs des travaux agricoles (ENITA). There are several ENITA : Bordeaux, Clermont Ferrand , Dijon

⁹⁵ Fédération Nationale d'Agriculture Biologique / National Federation of Organic Farming (FNAB), F-75011 Paris, <http://www.fnab.org/>

11 Annex 1: Research Programmes Related to Organic Farming: Project Lists

11.1 National Programme 2000-2003

11.1.1 Programme “Agribio I” (INRA and ACTA)

Project Number	Internal projects (INRA, 2000–2003)	National targeted funding (Total additional costs, in €) INRA	National total costs (in €)	Person-month (during the totality of the project)	Research scientists and Engineers
ABI-1	Cereal production: kinetics of crop requirements and soil nitrogen mineralisation rates	19,800	679,800	88	9
ABI-2	Fruit growing: fertilisation, fruit quality, hedgerows, biodiversity	19,800	102,300	11	4
ABI-3	Livestock production: sheep farming, extensive production, production periods, animal feeding, health.	19,800	1,069,800	140	23
ABI-4	How to improve organic farming standards to meet consumer requirements?	10,672	70,672	8	3
ABI-5	Development of production systems in potato growing	11,434	221,434	28	3
ABI-6	Plant breeding for potato growing	41,178	416,178	50	5
ABI-7	Environmental risk assessment in dairy farming	7,622	142,622	18	3
ABI-8	Organic milk quality and supply chain management	7,620	187,620	24	3
ABI-9	Plant breeding in cereals, cabbage, cauliflower	14,300	149,300	18	7
ABI-10	Influence of wheat cultivation management on mycotoxins	5,145	567,645	75	5
ABI-11	Cultivation of organic oilseed rape	6,700	621,700	82	6
ABI-12	Influence of organic farming on nitric waste in soil	9,900	309,900	40	4
ABI-13	Development of organic rice and hard wheat in the Camargue (marshlands in southern France)	3,200	723,200	96	6
ABI-14	Organic fertilisation in vegetable growing	6,860	224,360	29	4

Project Number	Internal projects (INRA, 2000–2003)	National targeted funding (Total additional costs, in €) INRA	National total costs (in €)	Person-month (during the totality of the project)	Research scientists and Engineers
ABI-15	Organic feed quality for pig farming	4,572	570,822	75.5	5
	Collaborative projects (Call opened by INRA and ACTA, 2001-2003)				
ABI-16	How to reduce the use of copper	126,489	2526,489	320	30
ABI-17	Controlling grapevine yellows	51,539	921,539	116	
ABI-18	Production of seeds and plants in organic farming	261,697	703,447	58.9	36
ABI-19	Assessment of wheat genetic resources adapted to organic farming	22,900	2,366,2900	312	10

11.1.2 Programme “INRA – PSDR” (Research on regional development, not exclusively devoted to organic farming)

Project number	Projects INRA	National targeted funding (Total additional costs, in €)	National total costs, in €	Person-month	Research scientists and Engineers
PSDR-1	Project “ARPENT Bio”: Market and supply chains dynamics in the “Pays de la Loire” region	562,188	1,777,188	162	10
PSDR-2	Organic cereals and milk	26,059	129,559	13.8	2

11.1.3 Programme “ACTA” (separate)

Project Number	Projects ACTA 2000-2004	National targeted funding (Total additional costs, in €)	National total costs, in €	Person-month	Research scientists and Engineers
ACTA-1	Comparison of control strategies against the thistle (<i>Cirsium arvense</i> (L.) Scop.) in organic crop systems	112,127	370,877	34.5	7
ACTA-2	Regional raw materials and supply in pig and birds organic productions	207,588	612,588	54	13
ACTA-3	Plants and seeds	625,66	396,316	44.5	11

11.1.4 Ministry of Research: Global “AQS programme” (not totally devoted to organic farming)

Project Number	Project	National targeted funding, in €	National total costs, in €	Person-month	Scientists and engineers
AQS-1	AQS - bio future trends for the organic market and consumer learning	80,798	260,798	24	8
AQS-2	Control of corn production in organic farming and of processes of grinding adapted to the manufacture of nutritional high density flour	90,000	315,000	30	

11.2 National Programme 2004 - 2007**11.2.1 Programme “Agribio II” (INRA, ACTA, ACTIA)**

Number	Collaborative projects INRA-ACTA-ACTIA	National targeted funding (INRA), in €	National total costs, in €	Person-month (during the totality of the project)	Scientists and engineers
AB2-1	Improving the quality of organic bread	212284	1,022,284	108	28
	Collaborative projects INRA-ACTA				
AB2-2	Fertilisation in organic farming	173,905	1,478,905	174	29
AB2-3	Fruits plants improvement	33,766	1,212,766	157.2	16
AB2-4	Conversion in organic farming	96,490	1,191,490	146	21
AB2-5	Analyzing the impact of organic farming on the environment (in breeding production)	117,780	522,780	54	6
	INRA internal projects				
AB2-6	Improving the potato seeds	10,000	325,000	42	8
AB2-7	Interactions genotype-milieu and participatory selection	60,500	1,065,500	134	10

AB2-8	Quality of cheep products	20,000	342,500	43	13
AB2-9	Global Control of parasitism	13,000	253,000	32	10

11.2.2 Programme “ADAR”

Project number	Projects	National targeted funding	National total cots	Person-month	Scientists and engineers
ADAR-1	To improve quality of food	248,828	736,328	65	9
ADAR-2	Optimization of Tillage in Organic Farming (ploughing, no - techniques)	297,686	882,686	78	14
ADAR-3	Low input straw cereals	69,386	301,886	31	4

11.2.3 Ministry of Research: Global “RARE program” (not totally devoted to organic farming)

Project number	Projects	National targeted funding	National total costs	Person-month	Scientists and engineers
RARE	Future trends for the organic market II	52,767	322,767	36	4

11.3 Regional Programmes 2000 – 2006

11.3.1 Pôle Bio Massif Central – Programme 2000-2006

Number	Projects
1	Forage system characteristics and evolutions in organic dairy cattle farms in Centre of France
2	Demonstration in organic calf and beef cattle finishing system in Limousin
3	Demonstration in organic meat sheep and beef cattle finishing system in dry area of South Centre of France
4	Technical and economical reference acquisition in beef cattle, diary cattle and meat sheep organic systems
5	Experimental mixed crop-livestock farm in organic beef cattle system
6	In-farm research in organic meat sheep and beef cattle husbandry practices in Limousin
7	In-farm research in organic meat sheep and beef cattle husbandry practices in South Centre of France
8	Technical, economic, feeding and sanitary set of reference in organic dairy sheep production
9	Milk quality and livestock farming practices in organic farming

10	Grassland mechanical maintenance in organic farming
11	Permanent pasture organic fertilisation in organic farming
12	Organic high quality wheat and mixed cereals: crop management sequence, varieties, quality and yield evaluations
13	Varieties evaluation of mixed and forage cereals and protein-rich plants in organic farming
14	In-farm research in organic "crop science"
15	Coordination of organic farming system research in Centre of France

11.3.2 GRAB – Programme 2000-2006

	Projects
1	Improvement of soil structure: new tillage systems in organic vegetables
2	Soil management in orchards: e.g. weed control, green manuring.
3	New organic orchard management: semi-extensive orchards (e.g. low input, low density)
4	Improvement of organic tree nursery management
5	Evaluation of vegetable varieties suitable for organic farming (e.g. lettuce, tomatoes)
6	Evaluation of fruit varieties suitable for organic farming
7	Use of biocontrol agents in organic greenhouses and in orchards
8	Biocontrol of soilborne diseases and pests (<i>Nematodes</i> , <i>Sclerotinia</i> , ...) in organic vegetables and vines.
9	Study and evaluation of plant elicitors against diseases (e.g. mildew, blight)
10	Evaluation of plant extracts (including phytotherapy) to control pests (e.g. aphids, lepidopters, pear midge) in vegetable production and orchards.
11	Control of gasteropodes in organic farming
12	Analysis and control of wood diseases (e.g. Esca...) in vines
13	Apple and pear scab control through orchard management (e.g. leaves removal)
14	Pear orchard management to control <i>Monilia</i>
15	Use of clay to control pests in orchards
16	Vole control in orchards
17	Fruit fly control in Mediterranean orchards

18	Mating disruption in orchards
19	Control of <i>Scaphoideus</i> / in vineyards
20	Control of post-harvest diseases (<i>Monilia</i>) on peach: antagonists and heat treatments
21	Improvement of soil fertility (e.g. green manuring)
22	Improvement of soil nutrition and organic fertilizer use in vegetable and fruit growing
23	Improvement of functional biodiversity in organic fields (e.g. flower strips, edges)
24	Effect of farming systems (organic, conventional) on biodiversity
25	Bioplastics and biodegradable mulches on organic vegetables
26	Regional organic fruit growing farm network
27	Organisation of organic congresses for farmers, technicians, researchers and other actors
28	Organisation of farmers' meetings
29	Teaching for students and farmers
30	Consulting for organic farming
31	Writing of books, technical leaflets for in organic farming

12 Annex 2: Research Programmes on Organic Farming in France: Budget Distribution per Year and Thematic Area

12.1 Budget distribution per year and per thematic area – National programmes

Additional costs distribution per year and per theme (in €)

	2001	2002	2003	2004	2005	2006	2007	Total
1-Farming system					25,500	25,500		51,000
2-Animal husbandry	12,186	115,980	103,794		6,500	6,500		244,960
3-Crop husbandry	75,659	402,093	336,334	88,903	147,281	58,379	23,129	1,131,776
4-Soil					99,229	99,229	99,229	297,686
5-Environmental aspects	8,761	8,761			9,000	9,000		35,522
6-Food systems	248,139	261,168	257,358		225,468	225,468	82,943	1,300,544
7-Value, standards and certification	5,336	5,336						10,672
8-Knowledge management								
Total	350,081	793,338	697,486	88,903	512,978	424,076	205,301	3,072,160

Total costs: distribution per year and per theme (in €)

	2001	2002	2003	2004	2005	2006	2007	Total
1-Farming system					595,745	595,745		1,191,490
2-Animal husbandry	820,311	1,126,605	306,294		126,500	126,500		2,506,210
3-Crop husbandry	13,451,736	14,545,526	1,196,090	1,345,836	4,283,428	795,879	100,629	35,719,123
4-Soil					294,229	294,229	294,229	882,686
5-Environmental aspects	432,911	559,256	126,345		261,390	261,390		1,641,291
6-Food systems	1,525,311	1,590,091	901,608		1,089,218	1,089,218	245,443	6,440,889
7-Value, standards and certification	35,336	35,336						70,672
8-Knowledge management								
Total	16,265,605	17,856,814	2,530,337	1,345,836	6,650,510	3,162,961	640,301	48,452,361

12.2 Budget distribution per year and per thematic area – Regional programmes

12.2.1 Pôle Bio Massif Central: Additional costs: distribution per year and per thematic area (in €)

	2000	2001	2002	2003	2004	2005	<i>Total</i>
1- Farming systems	37 502 €	53,357 €	113,207 €	103,102 €	66,408 €	116,319 €	489,895 €
2- Animal husbandry	22 867 €	64,638 €	0 €	51,098 €	29,530 €	39,681 €	207,814 €
3- Crop husbandry	38 722 €	39,411 €	68,988 €	110,371 €	0 €	52,024 €	309,516 €
8- Knowledge management	53 357 €	0 €	46,954 €	39,000 €	36,600 €	50,000 €	225,911 €
<i>Total</i>	<i>152 448 €</i>	<i>157,406 €</i>	<i>229,149 €</i>	<i>303,571 €</i>	<i>132,538 €</i>	<i>258,024 €</i>	<i>1,233,136 €</i>

12.2.2 Pôle Bio Massif Central: Total costs: distribution per year and per thematic area (in €)

	2000	2001	2002	2003	2004	2005	<i>Total</i>
1- Farming systems	49,775 €	99,092 €	257,938 €	258,300 €	249,310 €	242,548 €	1,156,963 €
2- Animal husbandry	33,996 €	125,617 €	0 €	111,037 €	70,738 €	99,040 €	440,428 €
3- Crop husbandry	87,353 €	173,557 €	105,334 €	196,101 €	110,156 €	129,748 €	802,249 €
8- Knowledge management	66,620 €	0 €	67,000 €	60,000 €	61,100 €	62,500 €	317,220 €
<i>Total</i>	<i>237,744 €</i>	<i>398,266 €</i>	<i>430,272 €</i>	<i>625,438 €</i>	<i>491,304 €</i>	<i>533,836 €</i>	<i>2,716,860 €</i>

12.2.3 GRAB: Total costs: distribution per year and per thematic area (in €)

	2000	2001	2002	2003	2004	2005	2006	<i>Total</i>
1-Farming systems	100,000 €	120,000 €	120,000 €	144,000 €	176,000 €	158,000 €	156,000 €	974,000 €
2-Animal husbandry								
3-Crop husbandry	250,000 €	300,000 €	300,000 €	288,000 €	352,000 €	316,000 €	312,000 €	2,118,000 €
4-Soil	50,000 €	60,000 €	60,000 €	72,000 €	88,000 €	79,000 €	78,000 €	487,000 €
5-Environnemental aspects			40,000 €	72,000 €	88,000 €	79,000 €	78,000 €	357,000 €
6-Food systems								
7-Value, standards and certification								
8-Knowledge management	100,000 €	120,000 €	120,000 €	144,000 €	176,000 €	158,000 €	156,000 €	974,000 €
<i>Total</i>	<i>500,000 €</i>	<i>600,000 €</i>	<i>640,000 €</i>	<i>720,000 €</i>	<i>880,000 €</i>	<i>790,000 €</i>	<i>780,000 €</i>	<i>4,910,000 €</i>