

**ADAPTATION: FROM GENES TO POPULATIONS. GENETIC AND
BIOLOGY OF ADAPTATION TO STRESSES AND DISTURBANCES**

BIOADAPT

2013 Edition

Call for proposals closing date
23/01/2013 at 13h00 (1 pm) (Paris time)

Call for proposals publication address

<http://www.agence-nationale-recherche.fr/BIOADAPT-2013>

KEY WORDS

Adaptation, global change, disturbances, biotic stresses, abiotic stresses, adaptation mechanisms, adaptability, selection, breeding, diversity management, genetics, genomics, epigenetics, population biology, modelling, biological resources, interactions, invasive species, plasticity, physiological and ecophysiological regulations, animals, plants, microorganisms

Abstract:

Sustainable management of used and natural ecosystems requires consideration as a priority the capacities for adaptation of living organisms to stresses and disturbances of all kinds related to global changes (climate change, changes in biophysical and environmental conditions, social and economic drivers, etc.).

Adaptation to global changes may be described from global scale (ANR programme “*Global Environmental Changes and Societies*” CEP&S), to intermediate scale (ANR programme “*Viability and Adaptation of Productive Ecosystems, Territories and Resources Face to Global Changes*” AGROBIOSPHERE), and to the scale of individuals, populations and species covered here by the BIOADAPT programme. BIOADAPT is expected to strengthen the capital of useful knowledge from the previous complementary programmes (CEP&S, AGROBIOSPHERE).

Research developed in BIOADAPT will be motivated by the necessity to move towards more sustainability in management of natural and used ecosystems, biodiversity and biological resources.

To achieve this objective, BIOADAPT supports research in biology and genetics:

- in order to understand mechanisms of biological adaptation at the levels of genes, individuals, populations and species to global changes, stresses and disturbances
- and to propose operational solutions to promote adaptability in living organisms through innovative and original approaches

IMPORTANT DATES

CLOSING DATE OF THE CALL FOR PROPOSALS

The project proposals must be submitted on the ANR submission web site (link available on ANR website on the page dedicated to the call for proposals, the address of which is indicated on page 1) before the call for proposals closing deadline:

23/01/2013 AT 13H00 (1 PM) (PARIS TIME)

(see paragraph 5 "Conditions of submission")

SIGNED AND SCANNED DOCUMENT

Each partner must confirm participation in the project proposal by signing its administrative and financial document. This document can be printed from the ANR submission site after closure of the call for proposals. Once scanned in PDF format, the coordinator must upload all the signed administrative and financial documents to the submission web site no later than:

22/02/2013 at 13h00 (1 pm) (Paris time)

(see paragraph 5 "Conditions of submission")

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It is important to read carefully the present document in its entirety, and the regulations concerning the conditions of allocation of ANR funding (<http://www.agence-nationale-recherche.fr/RF>) before submitting a research project proposal.

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1. CONTEXT AND OBJECTIVES OF THE CALL FOR PROPOSALS

1.1. CONTEXT

The BIOADAPT programme aims to address sustainable management of the ecosystems and territories, of their biodiversity and of their resources.

This programme, entitled *“Adaptation: from genes to populations. Genetic and biology of adaptation to stresses and disturbances”*, aims at strengthening the platform of knowledge, useful for other complementary programmes: AGROBIOSPHERE (*“Viability and adaptation of productive ecosystems, territories and resources face to global changes”*), CEP&S (*“Global Environmental Changes & Societies”*) and CESA (*“Contaminants and Environments: Health, Adaptability, Behaviour & usages”*). These programmes are intended to anticipate the evolution and dynamics of ecosystems (productive to slightly human-modified) due to environmental changes. These diverse changes will have huge impacts eventually related to adaptation capacities. BIOADAPT covers different analysis scales, or different levels of biological integration, from genes to populations of a species, or of several species from a biocenose. AGROBIOSPHERE is specifically dedicated to the ecosystemic level at medium spatial scales (plot, drainage basin, small region, island...) and CEP&S to planetary and continental global scale.

Current environmental disturbances, and the evolution of economic and social conditions, as well as the threats on biodiversity, direct the scientific community to try to better understand and better control the adaptive mechanisms of individuals, populations, species and ecosystems (natural or human exploited). Research on biology of life adaptation will play a determining role for understanding ecosystems functioning, biodiversity preservation, agronomic production and food security.

The adaptation of ecosystems, plants, animals and microorganisms to global change is a strategic issue, important economically and socially. A good knowledge of these adaptation mechanisms should allow maintaining the evolution capacity of natural ecosystems and the productivity of the exploited ones. It should allow the development and the use of more diverse and better adapted genetic resources, needed by producers and users.

The pressure on biological resources (due to change of uses and degradation of soils and aquatic environments, to modifications of biochemical and geochemical cycles, to overexploitation of stocks, to biological invasions, to demographic pressure and to climatic changes) will have a significant economic impact on our societies. This necessary evolution requests scientific and technological breaks to ensure yet a sustainable management of the ecosystems and of their productive capacities.

Public policies, national regulations, international conventions are answers to the stakes of global changes (*Grenelle de l'Environnement* that is a national French forum on economic and social priorities for Environment, French National Strategy for Biodiversity, CBD, Convention on Climate Change) require the development of knowledge and their implementation in an economically sustainable manner. So, the constraints for reducing use of inputs will direct for example, to better exploit, or in a different manner, the genetic resources in order to get resistances or tolerances to pests and diseases. Climate change requires a better adaptation of the populations to their rapidly altering environment. The increased scarcity of fossil energies and of natural resources, as well as the control of pollutions and the greenhouse gas emissions, imply to breed new adapted varieties and efficient animal stocks with little discharge into the environment.

Methods should be developed to support and rationalize the genetic resources used to optimize adaptation, at the levels of genes, populations, and of their interactions.

The new methods and innovations that will emerge from the research actions supported by the programme BIOADAPT should have a direct impact on the decrease of pollution (inputs, water management, optimizing interactions), on optimizing agricultural production and for the methods of management for biodiversity and ecosystems.

1.2. PROGRAMME AND CALL OF PROPOSALS OBJECTIVES

The present call (2013 edition) is part of the BIOADAPT programme which encourages moving towards more sustainability in the management of ecosystems, biodiversity and natural resources. It takes place in the context of adaptation to major changes, including global ones and those with localised impacts. Genetic resources, considered as key elements for adaptation, are of particular importance in this programme. Understanding biology and genetics of adaptation as well as developing innovative methods for managing the adaptation are central points in the BIOADAPT programme.

The BIOADAPT programme has the following objectives:

- to understand adaptive mechanisms of organisms in response to stresses and disturbances caused by biotic and abiotic factors, in the context of global changes
- to explore diversity and dynamics of adaptive mechanisms, by elaborating scenarios on the future of biodiversity and biological resources
- to establish the platform of knowledge to understand the mechanisms of adaptation operating on different time periods and at different levels of organization (genomic, individual, populations, communities levels)

- to provide results underpinning ecological intensification (*cf* the AGROBIOSPHERE programme) by enabling adaptation of populations and exploited species to global changes and making them more efficient.
- to promote operational implementation of these results

2. THEMES

The call BIOADAPT 2013 (the second edition of the BIOADAPT programme) focuses on the genetics and biology of adaptation in response to stresses and disturbances caused by global change. The scope of the call covers the broad spectrum of environmental topics, encompassing animals, plants and microbes. Species can be model or not, wild or exploited. The human species will not be treated through BIOADAPT 2013. The call covers also different levels of human modifications and interactions with human activities. The proposals have to be motivated by the production of results fulfilling the challenges of adaptation.

In BIOADAPT 2013, “global change” designates all changes (climatic, environmental...) induced by human activities, directly or not: water and soil pollution, changes in land and marine use, destruction of natural environments and habitats, overexploitation of the renewable resources, societal and regulatory pressures, climatic change, higher frequency of extreme events and factors of instability, depletion of biological resources of the oceans, biodiversity losses, depletion of natural resources, emergence of diseases, biological invasions, biotic and abiotic risks, etc.

Most of the evolutionary mechanisms described at the levels of individuals, populations or species were set up on large scales of times (scale of the century or geological times) and are therefore disconnected from the shorter time periods characterizing the acceleration of climatic and environmental changes currently in course.

Presently, we have to face and deal with rapid, complex and heavy modifications of the environment which is in permanent evolution itself. The study of the adaptive processes induced by these global changes and the need to anticipate and master them for cultivated and domesticated species constitute an important objective of the call.

Understanding the adaptive mechanisms together with proposing innovative solutions to develop the adaptability constitute the two thematic lines of BIOADAPT 2013:

- the first axis aims to provide the knowledge base to understand the adaptive mechanisms set up at contemporary time periods.
- the second axis aims to encourage conceptual and methodological researches developing and promoting adaptation capacities (adaptability) of living species.

To answer the economical and societal questions posed by global changes, it is essential to benefit from all types of results and data. All approaches integrating this knowledge in reliable and validated models will be appreciated. Thus, research in modelling and scenario analyses are encouraged in both axes to study:

- the adaptive answers to stresses, disturbances or environmental changes (ability of populations to react, dynamics of the adaptive response, interaction adaptation-populations dynamics...), considering the level of genes, individuals, populations and communities,
- the future of biodiversity and biological resources in the context of global changes

2.1. THEME 1: STUDYING THE BIOLOGICAL MECHANISMS OF ADAPTATION

The first axis of BIOADAPT 2013 aims to document the biological bases of the adaptive response set up by living organisms (animals, plants and microorganisms) facing global changes. To deepen knowledge in this domain, thematic line 1 aims at considering several levels of analysis: genes, individuals, populations, as well as interactions between populations.

At the level of genes, BIOADAPT 2013 will support projects on the evolution of genetic diversity, evolution of genomes, their function and their regulation in response to climate change. For example, research on networks of genes involved in the resistance mechanisms to stresses and disturbances, research on correlations of genotypes variations with phenotypes ones, and research on all types of genes signatures related to environmental changes are eligible.

At another level of analysis, proposals can cover adaptive processes set up at the individual scale. For example, mechanisms of phenotypic plasticity (including physiological plasticity) in response to a variety of disturbances can be studied through BIOADAPT 2013. Other aspects such as dynamics of metabolism and evolution of the physiological, molecular and cellular regulations (reproduction, development, architecture) are covered through this call for proposals.

BIOADAPT 2013 proposals may also contribute to a better understanding of the adaptive mechanisms set up by populations and species. Studies may concern migrations, changes in modes of life, changes in traits of life and all physiological and behavioural responses to environmental stresses. Adaptive capacity of populations and species can also be studied through the study of constraints in evolution. Studying the emergence of invasive species in the context of global changes will be encouraged too. The analysis of this mechanism may be approached by two ways: studying the adaptive capacities of these species on one hand, and studying the mechanisms set up in reaction to this emergence on the other.

Studying different types of interactions between individuals, populations and with environment (individual/individual, individual/environment, population/ environment) may also contribute to improve knowledge on the biological mechanisms of adaptation; these interactions are strongly related to human practices (like agriculture) and society. The proposals of the call may also concern symbiotic interactions between wild and exploited populations, reorganizations of communities, co-evolutive, negative (competition) and positive (facilitation) interactions observed within biocenoses. Research on population structure and genetic diversity within species or communities of species in a given landscape (landscape genetics) will also be welcomed, providing a knowledge base for AGROBIOSPHERE.

The research led in this thematic line may use a large variety of methods and approaches drawn from: genomics, metagenomics, transcriptomics, proteomics, quantitative genetics, population genetics, epigenetics, phylogeny, cellular biology, phenotyping, physiology, ecophysiology, ethology, ecology...

Overall, integration of several levels of analyses (genes, individuals, populations, interactions) could be led through theoretical studies, modelling and simulation approaches.

2.2. THEME 2: RESEARCH FOR DEVELOPING ADAPTABILITY IN LIVING ORGANISMS

The second axis of BIOADAPT 2013 aims to develop innovative approaches for integrating, exploiting and implementing the knowledge acquired on adaptation from the first axis.

Projects could mobilize public and private partners interested in exploitation and implementation of adaptability (R&D companies, industrials, farmers, foresters and other environmental managers or productive systems administrators...)

This second theme encourages the development of selection and breeding methods to adapt individuals and species (whether natural, cultivated or domesticated) to global changes while ensuring their environmental sustainability.

Development of methods and tools useful for improving and expanding the genetic and physiological diversity of living organisms in order to ensure their adaptability and that of their communities and ecosystems is welcomed. In all cases, the impacts of the proposed methods will have to be explored.

To contribute to develop new species, varieties, races and populations which are adapted to environmental constraints, BIOADAPT proposals can also consist of characterizing, developing and using new biological and genetic resources. These kinds of studies will provide a better knowledge about resources and also about their modes of management (costs, securing their conservation, their accessibility).

The « cost » of adaptation observed at level of cell, individual or population (fitness, selective value...) may be studied here in order to assess the impacts of the proposed solutions.

Projects may be based on different approaches like: biotechnologies, high throughput phenotyping, ecophysiology, genetics, population genomics, modelling etc. Genomic selection is one of the technological ways that could be addressed in this thematic line. All proposals integrating data from multiple sources (like genotyping, sequencing, phenotyping, proteomics, transcriptomics, networks of genes...) will be welcomed.

More generally, BIOADAPT 2013 will encourage the development of « integrative » methods that allow acquisition, management, exploitation and accessibility of data. Indeed, the objective of the programme is not only to acquire the data but to go further in order to understand and drive mechanisms of biological adaptation while transferring knowledge to other species not studied before.

3. EVALUATION OF THE PROPOSALS

The ANR organises the selection process by involving various actors with the following respective roles:

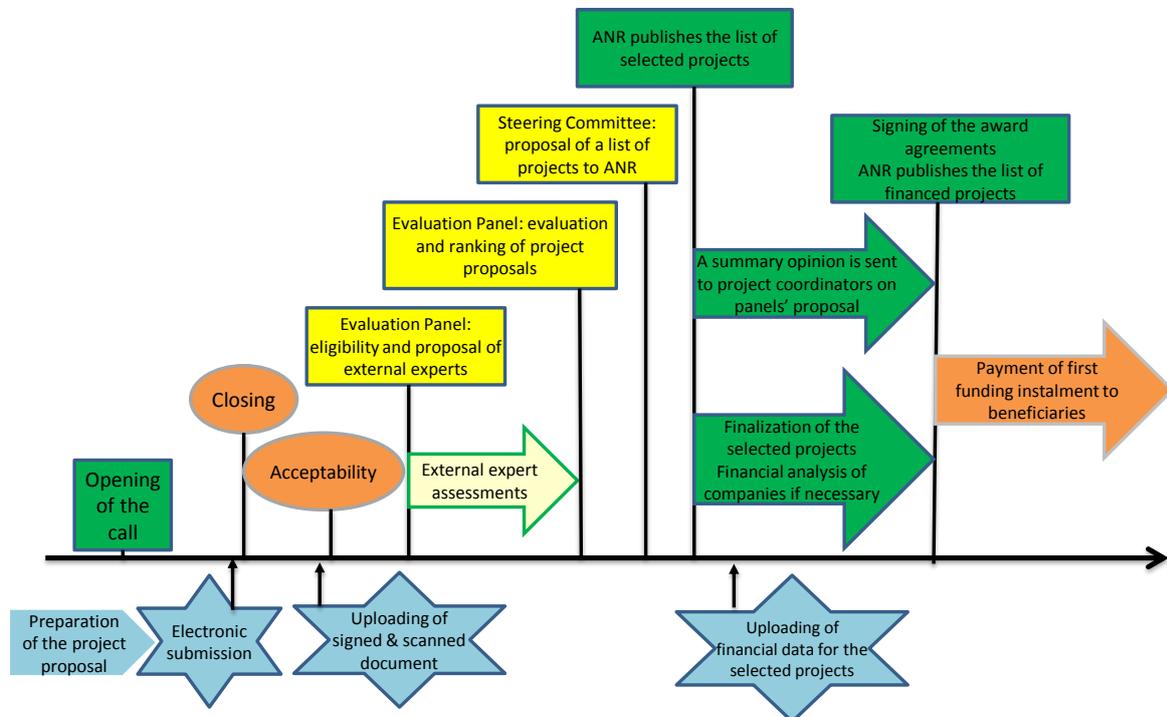
- The evaluation panel is mandated to assess the projects taking into account the external reviews, and to divide them according to their quality into "list A", "list B", and "list C declined". The panel comprises French and foreign scientists, members of the relevant research communities, from either the public or private sector.
- The external peer reviewers (ad hoc reviewers) designated by the evaluation panel give a written opinion on the project proposals. At least two ad hoc reviewers are designated for each project.
- The senior scientific managers, stakeholders and institutional representatives, who make up the steering committee, have to propose a list of projects to be financed by the ANR, in compliance with the work of the evaluation panel.

The persons involved in project selection undertake to comply with the provisions of the ANR's code of ethics, and in particular those relating to confidentiality and conflicts of interest. The ANR code of ethics is available on the ANR web site¹. The conditions of functioning and the organisation of the evaluation panel and steering committee are described in documents available on the ANR web site². Once the list of selected projects has been published, the composition of the programme committees will be posted on the ANR web site³.

¹ <http://www.agence-nationale-recherche.fr/CharteDeontologieSelection>

² <http://www.agence-nationale-recherche.fr/Comites>

³ See website address indicated on page 1



The selection procedure comprises the following main steps:

- Evaluation of the **technical and administrative eligibility** of the project proposals by the ANR in accordance with the criteria stipulated in paragraph 3.1.
- Evaluation of the **scientific eligibility** of the project proposals by the evaluation panel in accordance with the criteria stipulated in § 3.2.
- Consultation by ANR of the peer reviewers (ad hoc reviewers) proposed by the evaluation panel.
- Ad hoc reviewers' assessments in accordance with the criteria stipulated in paragraph 3.3.
- Assessment of the project proposals by the evaluation panel after receiving the ad hoc reviewers' assessments.
- Examination of the project proposals by the steering committee, and submission of a proposed list of projects for funding by the ANR.
- Drawing up of the list of projects selected by the ANR (main list and possibly a complementary list) and publication of the list on the ANR web site on the page dedicated to the call for proposals.
- Sending the coordinators of declined projects an assessment report based on the evaluation panel's proposal.

- Revising and finalising the scientific, financial and administrative files for the selected projects (exchanges between ANR and applicants), including for any participating companies, as indicated in paragraph 6.1:
 - checking their capacity to be financed in the framework of State aid for research, development and innovation (RDI),
 - checking their capacity to assume the financial aspects of their project commitments,
 - establishing the incentive effect of the grant.
- Signing of the grant award agreements with the beneficiaries.
- Publication of the list of projects selected for funding on the ANR web site page dedicated to the call for proposals.
- First payments to the beneficiaries in accordance with the rules set in the regulations pertaining to the conditions of allocation of ANR funding (see link on ANR web site given on page 3).

3.1. TECHNICAL AND ADMINISTRATIVE ELIGIBILITY CRITERIA

IMPORTANT

Project proposals examined by the ANR services that do not meet the technical and administrative criteria will not be submitted to the evaluation panel and will not be granted ANR funding under any circumstances.

- 1) The **administrative and financial information** must be completed in full on the ANR's submission web site by the call for proposals closing date.
- 2) **The scientific document must mandatorily be provided in unprotected PDF format, not exceed 40 pages, including annexes, and not exceed 15 pages for the scientific description (paragraphs 2 to 3 of the scientific document)** strictly following the preparation instructions specified in the template available on the ANR website on the page dedicated to the call for proposals. It must be submitted on the ANR's submission web site in its finalised form by the call for proposals closing date.
- 3) The project **coordinator** is authorised to submit only one single research proposal to the ANR for all the 2013 edition ANR calls for proposals as coordinator.
- 4) The project **coordinator** must not be a member of the evaluation panel or the steering committee of the programme and/or of the present call for proposals.
- 5) The project **coordinator** should devote at least **40%** (5 men.months in average per year) of his/her research time⁴ to the project (possibility of non-uniform distribution over the duration of the project).
- 6) The project **duration** must be between 24 and 48 months.
- 7) **Minimum number of partners** (including the coordinating partner): **2**

⁴ See definition of research time in paragraph 6.7.

3.2. SCIENTIFIC ELIGIBILITY CRITERIA

IMPORTANT

Project proposals that do not meet the scientific eligibility criteria after examination by the evaluation panel will not be granted ANR funding under any circumstances.

- 1) The evaluation panel may reject a project proposal if it is similar⁵ to another project that is already funded, or to a project that is currently being evaluated under another ANR call for proposals at the closing date of the BIOADAPT call.
- 2) The evaluation panel may reject a project proposal that infringes an intellectual property right characterising a counterfeit within the meaning of intellectual property .
- 3) The project must **enter into the scope** of the call for proposals described in paragraph 2.
- 4) **Type of research:** this call for proposals is open to the following types of projects:
 - Fundamental research⁶
 - Industrial research⁶
- 5) **Composition of the consortium⁷:**
The consortium must include at least one partner belonging to a research organisation (university, EPST- Scientific or Technical Public Institution, EPIC).
- 6) The evaluation panel must not judge the project proposal to be similar⁸ to a project that is already funded in the call for proposals “Biotechnologies et Bioressources” launched from the “Investissements d’Avenir” programme.

⁵ A project proposal will be judged similar to another if its principal objectives are the same, or result from a simple adaptation to the terms of the call for proposals **AND** the composition of the consortium is largely identical.

⁶ See research category definitions in paragraph 6.4.

⁷ See definitions relative to project organisation and structures (paragraphs 6.5 and 6.6)

⁸ A project proposal will be judged similar to another if its principal objectives are the same, or result from a simple adaptation to the terms of the call for proposals **AND** the composition of the consortium is largely identical.

3.3. EVALUATION CRITERIA

IMPORTANT

Only project proposals that satisfy the technical/administrative and scientific eligibility criteria will go through the entire evaluation process.

The peer reviewers (ad hoc reviewers) and members of the evaluation panels are required to examine the project proposals using the following evaluation criteria. Appraisal factors are suggested for each criterion to assist the evaluators in their task, but are neither limiting nor compulsory.

1) Relevance of the proposal with respect to the call for proposals orientations:

- appropriateness for the objectives of the programme and the call for proposals (see paragraph 1)
- appropriateness for the themes of the call for proposals (see paragraph 2).

2) Scientific and technical quality

- scientific excellence in terms of progress of knowledge with respect to the state of the art, conceptual breakthrough,
- innovative nature in terms of technological innovation or of innovation potential with respect to the current situation,
- overcoming technological barriers,
- integration of the different disciplinary fields.

3) Methodology, quality of project construction and coordination

- scientific and technical feasibility of the project, choice of methods,
- structuring of the project, rigour in presenting the final results (deliverables), identification of milestones,
- quality of the coordination plan (project management from the functional, technical, organisational, temporal and financial aspects), involvement of the coordinator,
- strategy for technology transfer and for exploiting the potential of the project results.

4) Overall impact of the project

- potential for utilisation or integration of the project results by the scientific or industrial community or society, and impact of the project in terms of knowledge acquisition,
- industrial or technological application prospects and economic and commercial potential, business plan, integration in the industrial activity. Credibility of the described technology transfer and the method for exploiting the results,
- benefit for society, public health, etc.,
- consideration of environmental issues.
- actions to promote scientific and technical culture and communication,

- actions for the dissemination of scientific results in higher education.

5) Quality of the consortium

- level of scientific excellence or expertise of the teams,
- appropriateness of the partnership for the scientific and technical objectives,
- complementarity of the partnership,
- openness to new players,
- active role of the corporate partner(s).

6) Appropriateness of project resources / Project feasibility

- schedule feasibility,
- appropriateness of the project management means implemented,
- appropriateness and justification of the requested funding,
- appropriateness of the coordination costs,
- justification of the permanent personnel resources,
- justification of the temporary personnel resources (trainees, PhD students, post-doctoral researchers),
- evaluation of the sum for investments and equipment purchases,
- evaluation of the other financial items (travel, subcontracting, consumables, etc.).

3.4. SELECTION CRITERIA

The programme steering committee proposes the final ranking of the project proposals in compliance with the work of the evaluation panel.

The steering committee will determine the final ranking by evaluating adequacy between the ranking proposed by the evaluation panel and the strategic objectives of the call of proposals and the programme BIOADAPT.

3.5. IMPORTANT RECOMMENDATIONS

The following recommendations are provided to help prepare the project proposals in the context of this call for proposals.

The evaluation panel may have to judge the appropriateness of a deviation from the recommendations; therefore it is preferable to explain the reasons for any such deviations.

RECOMMENDATIONS CONCERNING STAFF INVOLVEMENT

- The total (in person months) of the non-permanent personnel (doctoral students, postdocs, fixed-term contracts, temporary workers) receiving ANR funding should not

exceed 30% of the total (in person months) of the staff (permanent and non-permanent personnel) assigned to the project.

RECOMMENDATION CONCERNING THE REQUEST FOR ANR FUNDING

- In the framework of this call for proposals, applicants are invited to present projects that justify ANR funding for sums limited to €500,000. This does not exclude the possibility of projects requesting funding for smaller or larger sums being selected. The relevance of any deviation from this recommendation will be assessed.

RECOMMENDATION CONCERNING "CONTINUATION" PROJECTS

- For project proposals following on from previous project(s) funded by the ANR, the applicants must submit the project at European level in priority when a call for proposals compatible with the project theme exists. If this is not the case, they are asked - in the case of submission to the ANR - to include a detailed report of the results obtained and to clearly describe the new problems posed and the new objectives with respect to the previous project.

Failure to provide this information may be considered like a positioning deficiency with respect to the state of the art or of the technical innovation.

RECOMMENDATION CONCERNING PROJECTS INVOLVING FOREIGN PARTNERS WITHOUT A BILATERAL AGREEMENT BETWEEN THE ANR AND A FOREIGN FUNDING AGENCY COVERING THE THEMATIC SCOPE OF THE PROJECT

In the framework of this call for proposals, the foreign partner shall ensure its own funding. The foreign partner is asked to stipulate in the scientific document:

- whether the activities are carried out using its own funds,
- if it already has on-going national funding for its contribution to the project, or

RECOMMENDATION CONCERNING THE SUBCONTRACTING

Beneficiaries may perform work by others outside the project. The cost of these services are listed on an individual basis in the operating costs and must remain less than or equal to 50% of the overall cost of entering the base project aid, unless accepted by the Director of the Agency on request motivated by the beneficiary.

RECOMMENDATION CONCERNING SCIENTIFIC AND TECHNICAL CULTURE AND COMMUNICATION ACTIONS

- Actions relating to scientific and technical culture and communication are eligible for ANR funding. They must be clearly linked to the project and have an ambitious target impact, specifying the specific audiences (e.g.: the media, youth, working populations,

teaching professionals, etc.). The budget devoted to these tasks should not exceed 10% of the requested funding.

- These actions must form the subject of a clearly identified project task. They shall be evaluated as a factor in the overall impact of the project.
- For further information on the integration of scientific culture and communication actions, it is recommended to consult the ANR website page on the subject⁹.

RECOMMENDATION CONCERNING ACTIONS IN FAVOUR OF HIGHER EDUCATION

- The projects funded by the ANR may integrate current research themes in education programmes and this type of initiative can be included in their work programme. The proposed actions in favour of higher education must have a direct link with the content of the project. The budget devoted to these tasks should not exceed 10% of the requested funding.
- These actions incorporated in the research project shall be evaluated as a factor in the overall impact of the project.

RECOMMENDATION CONCERNING THE MANAGEMENT OF INFRASTRUCTURE AND HEAVY EQUIPMENT

This call for proposals is not intended to finance infrastructures or heavy equipment. Other equipment required for the project can be supported under certain conditions, for instance, IF THERE IS A co-financing. Applications will be considered on a case by case basis according to their relevance to the project and their consistency with the research strategy of the institutions that belong to the project partners.

⁹ <http://www.agence-nationale-recherche.fr/Diffusion>

4. PARTICULAR FUNDING PROVISIONS

This section complements the general provisions set forth in paragraph 6. On completion of the selection process, the ANR will not take into account for a selected project proposal a forecast expense that does not satisfy the following conditions.

RECRUITING DOCTORAL STUDENTS

Doctoral students can be funded by the ANR. The financing of doctoral students by the ANR requests that the Graduate School has accepted the student. The doctoral students are counted as non-permanent personnel for application of the "Recommendations concerning staff involvement" (paragraph 3.5).

OTHER PARTICULAR FUNDING PROVISIONS

The project partners will be authorized to execute part of the work by services delivery performed by third parties outside the project, possibly foreign, subject to the conditions laid down in the Financial Regulation of the ANR. These third parties will not be considered as project partners. In the case of participation of foreign research teams, proposers are invited to check this possibility with the ANR to the email address of this call for proposals shown on page 3.

5. SUBMISSION CONDITIONS

5.1. CONTENT OF THE SUBMISSION FILE

The submission file must include all the elements necessary for the scientific and technical evaluation of the project proposal. It must be complete when the call for proposals closes, the date and time of which are indicated on p. 1 of this call for proposals.

IMPORTANT

No additional elements will be accepted after closing of the call, the date and time of which are indicated on page 1 of this call for proposals.

The complete submission file comprises two documents that must be entirely filled out:

- a) The "scientific document" is the scientific and technical description of the project proposal. The guidelines for preparing this document are given in the template available on the ANR website on the page dedicated to the call for proposals (see address on page 1). This document is to be uploaded **MANDATORILY** in unprotected PDF format to the "Scientific document" tab of the submission site.
- b) The "administrative and financial document" for the project proposal. It is generated by the submission site after entering the required information on line.

It is strongly recommended to give a scientific and technical description of the project proposal in English, except for projects where the use of French is essential. If the scientific and technical description is written in French, an English translation may be requested to allow an evaluation by persons who do not speak French.

5.2. SUBMISSION PROCEDURE

1) ON-LINE SUBMISSION, it is obligatorily to submit:

- before the date indicated on page 1,
- via the link available as of 19/11/2012 on the call for proposals publication page of the ANR web site (address on page 1).

The project proposal can be modified right up until the call for proposals is closed.

Only the information present on the submission site when the call for proposals closes will be taken into account.

The project proposal coordinators will receive an e-mail acknowledging submission when the call for proposals closes, on condition that the scientific document has been uploaded to the submission site AND the funding request has been completed (total not zero).

2) TRANSMISSION OF A SCAN OF THE ADMINISTRATIVE AND FINANCIAL DOCUMENT (in PDF format).

This document is generated by the submission site after entering the required information on line.

This document is to be downloaded from the submission site, printed, signed by all the partners, then scanned (in PDF format) and uploaded to the ANR submission site by the project coordinator no later than the date indicated on page 3.

Reminder: for each public organisation or research foundation partner, the scientific and technical leader and the director of the laboratory or host unit **must sign** the administrative and financial document. The applicants must transmit this document to the representatives of their supervisory bodies as quickly as possible.

For partners having another status, only the legal representative **must sign** this document.

This document is not to be signed by the foreign partners.

5.3. SUBMISSION RECOMMENDATIONS

It is strongly recommended:

- Not to wait until the call for proposals closing deadline date to finalise the project submission procedure.

- To start on-line entry of the administrative and financial data at the latest one week before the closing date of the call for proposals. Below for information is a non-exhaustive list of the information to provide:
 - full name, acronym and category of the partner
 - calculation principle for the funding base
 - membership of a Carnot institute
 - for public research organisation laboratory: unit type and number, managing and hosting supervisory bodies
 - the SIRET number and headcount (for SMEs)
 - the address of work performance
 - funding request: VAT-exclusive cost per month of the permanent and non-permanent personnel, indirect fixed costs¹⁰
 - etc
- To register the information entered on the submission site before leaving each page;
- To regularly consult the programme website at the address indicated on page 1, which contains updated information concerning the applicable procedures (submission site user's guide, budget preparation guide, glossary, FAQs, etc.);
- To contact, if necessary, the correspondents by e-mail at the address(es) indicated on page 3 of this call for proposals.
- To check that all fields in the submission site are filled

5.4. SUBMISSION CONDITIONS FOR APPLICATION FOR LABEL GIVEN BY A COMPETITIVENESS CLUSTER¹¹

Application for project label given by one or more competitiveness clusters is carried out on the ANR submission site through the tab devoted to competitiveness clusters.

Project partners are urged to contact the cluster as early as possible so that the cluster can assist them optimally with the project submission procedure.

¹⁰ Indirect fixed costs applicable to the wage costs, expressing all the indirect costs (fluids, infrastructure, etc.) borne by the partner entity for the management and maintenance of the public laboratories. Varies according to the organisation.

¹¹ See complementary measures relative to competitiveness clusters in paragraph 6.3

6. GENERAL PROVISIONS AND DEFINITIONS

6.1. ANR FUNDING

TYPE OF FUNDING

The funds allocated by the ANR to each partner will be provided as a non-reimbursable grant in accordance with the provisions of the "Regulations relative to conditions of allocating ANR funds", which can be consulted on the ANR web site¹².

IMPORTANT

The minimum funding allocated by the ANR to a project partner is set at **€15,000**, which does not exclude the possibility of the consortium including partners who do not request ANR funding (project participation on own funds).

ANR funding is limited to project partners residing in France, the associated international laboratories (LIA) of French research organisations and higher education and research institutions, and French institutions established abroad. Foreign partners may nevertheless participate on condition that each foreign partner ensures its own financing in the project.

CONDITIONS OF FUNDING OF COMPANIES

IMPORTANT

The European Community Framework of State aids to companies places a number of conditions on the allocation of ANR funds to companies. If these conditions are not fulfilled by a company participating in a selected project, the ANR will not allocate funding to that company.

- 1) Companies in financial difficulty¹³ are not eligible for State aid for research, development and innovation (RDI). Consequently, at the end of the selection process, the ANR will check all the selected and funded research projects to ensure that no corporate partners are in one of the situations corresponding to the definition of paragraph 6.7.
- 2) The ANR will verify the capability of the companies to finance the part of the work remaining at their expense. Consequently, at the end of the selection process, the ANR will check all the funded research projects to ensure that the corporate partners, where

¹² <http://www.agence-nationale-recherche.fr/RF>

¹³ See definition of companies in difficulty in paragraph 6.7.

applicable, are capable of financing the share of the work to perform that is not covered by ANR funding.

- 3) The incentive effect¹⁴ of allocating ANR funding to a company other than SMEs must be established. Consequently, non-SMEs selected for funding under this call will be asked to provide the elements necessary to evaluate this aspect during the finalising of the administrative and financial files.

Whatever the case, the non-funding of a company could call into question ANR's funding of the entire project if it considers that the ability of the consortium to achieve the project objectives is compromised.

The maximum ANR funding rates for companies¹⁵ for this call for proposals are as follows:

Type of project	Maximum funding rate for SMEs	Maximum funding rate for companies other than SMEs
Fundamental research ¹⁶	45% of eligible expenditure	45% of eligible expenditure
Industrial research ¹⁶	45% of eligible expenditure (*)	30% of eligible expenditure

(*) For projects that do not involve true collaboration between a company and a research organisation, the maximum rate is 35%.

There is true collaboration between a company and a research organisation when the research organisation underwrites at least 10% of the costs on which the funding request is based and when it retains the right to publish the results of the research, whenever these results are obtained from the organisation's own research efforts.

6.2. REGULATORY AND CONTRACTUAL OBLIGATIONS

GRANT AWARD AGREEMENTS

The conditions of execution and financing of the research projects selected and funded by ANR on completion of the selection process shall be defined in the grant award agreements comprising general conditions available on the ANR website¹⁷ and particular conditions. The particular conditions of the grant award agreements shall be signed between the ANR and each of the research project partners.

¹⁴ See definition of the incentive effect in paragraph 6.7.

¹⁵ See definitions relative to structures in paragraph 6.6.

¹⁶ See research category definitions in paragraph 6.4.

¹⁷ To be consulted on page <http://www.agence-nationale-recherche.fr/RF> by the end of 2012.

CONSORTIUM AGREEMENTS

The partners in research organisation - company partnership projects¹⁸ must, under the auspices of the project coordinator, conclude an agreement that stipulates in particular:

- the sharing of the intellectual property rights of the project results;
- the conditions of publication / dissemination of the results;
- the technology transfer and exploitation of the project results.

It is also strongly recommended to conclude a consortium agreement for projects including a foreign partner.

These agreements shall also enable the existence of any indirect financial support entering into the calculation of the maximum level of funding authorised under the European Community Framework for State aid for research, development and innovation (referred to hereinafter as the "EU Community Framework") to be determined.

It will be assumed that there is no indirect support if at least one of the following conditions is satisfied:

- the participating companies bear the totality of the research project costs;
- the results that do not give rise to intellectual property rights can be widely disseminated, and the research organisation holds all the intellectual property rights, if any, resulting from its RDI activity;
- the research organisation receives from the participating companies payment equivalent to the market price for the intellectual property rights resulting from the activities it carried out in the project and which are transferred to the participating companies. Any contribution of the participating companies to the research organisation's expenses must be deducted from the said payment.

SCIENTIFIC FOLLOW-UP OF THE PROJECTS

The scientific aspects of the funded projects shall be monitored by the ANR during project execution and until one year after their completion. Scientific follow-up comprises:

- participation of the coordinator in the kick-off meeting of the projects selected under this call for proposals
- supply of one or two intermediate progress reports depending on the project duration,
- supply of up-to-date summaries of the project objectives, work and results, intended for the ANR publications on all media,
- supply of an end-of-project report necessary for the awarding of the final balance of the ANR funding,
- collection of project impact information for up to one year after project completion,
- participation in at least one intermediate project review meeting,

¹⁸ See definition in paragraph 6.4.

- participation in the seminars organised by the ANR (one or two participations).
The project proposals shall include the corresponding work load in their work programme.

MORAL RESPONSIBILITY

The funding of a project by the ANR does not relieve the project partners of their obligations concerning the regulations and code of ethics applicable to their area of activity.

The coordinator undertakes in the name of all the partners to keep the ANR informed of any change likely to modify the content, the partnership or the schedule of project performance between the time of the project proposal submittal and publication of the list of selected projects.

All the partners undertake to follow the good research practices described in the code of ethics of the ANR project players available on the ANR website¹⁹ equally well during the preparation of their submitted research project proposal as in its implementation if it is selected and funded by the ANR.

PERFORMANCE OF AD-HOC REVIEWS FOR THE ANR

The coordinator and the scientific and technical leader of each partner of the submitted project proposals may be invited by the ANR to perform ad hoc reviews in the context of other calls for proposals and/or programmes. They undertake to examine such requests with diligence.

6.3. ADDITIONAL PROVISIONS

COMPETITIVENESS CLUSTERS²⁰

The partners of a project proposal can obtain a label given by one or more competitiveness clusters. The label process of a project reflects the acknowledgement of the interest by a cluster of the project with respect to the strategic orientations of the cluster.

The partners involved in a project currently being created are advised to contact the competitiveness cluster(s) that could label their project at the earliest possible moment.

As the project label application requires the disclosure of strategic, scientific and financial information to the cluster, the partner behind the label application initiative is asked to obtain the agreement of the other project partners beforehand.

¹⁹ <http://www.agence-nationale-recherche.fr/CharteDeontologieSoumission>

²⁰ See definition of competitiveness cluster in paragraph 6.6.

In the 2013 edition, the labels must be submitted by the call for proposals closing date. This new procedure will be implemented gradually so that the clusters and the applicants can adapt to this functional change. Thus, for the calls for proposals of the 2013 edition that open before 31st December 2012, the ANR grants the cluster governance structures a period of one month after closure of the calls to download the label certificate and send it to the ANR. Subsequently, for all the calls for proposals opening after 1st January 2013, the projects will have to be labelled by the clusters before the calls close.

If the project is funded by the ANR, the partners undertake to communicate the project intermediate and final reports to the competitiveness cluster. The ANR reserves the option of inviting representatives of the competitiveness cluster to attend any project reviews or monitoring operations.

In the ANR selection process, the fact that a project is labelled by a cluster is taken into consideration by the steering committee.

The projects labelled by the competitiveness clusters and funded under the 2013 edition will not receive additional ANR funding.

FRENCH RESEARCH TAX CREDIT

The expenses incurred by companies to finance research work may be eligible for the research tax credit (see article 244 quater B of the general tax code).

The research tax credit (called CIR in French) for projects selected by the ANR may be allocated to companies in addition to the grant on the basis of the part of the research budget that is not covered by ANR funding.

A prior opinion on the eligibility of the operation for the CIR can be obtained by filing a request with the ANR for an advance tax ruling (prior agreement) (see article L80B3 bis of the "Livre des procédures fiscales" (French fiscal procedures book). To benefit from this provision, companies must choose the system provided for by article 3bis of article L80B (see paragraph 1 of the application form which can be downloaded from the following address):

<http://www.agence-nationale-recherche.fr/CIR>

The employees who examine the CIR application files are held to professional secrecy, on the same account as the tax authority employees under the conditions provided for in article L103 of the "Livre des procédures fiscales" (French fiscal procedures book).

6.4. DEFINITIONS RELATIVE TO THE DIFFERENT RESEARCH CATEGORIES

These definitions figure in the EU Community Framework for State aid for research, development and innovation²¹. The following meanings apply:

²¹ See OJUE 30/12/2006 C323/9-10 <http://www.agence-nationale-recherche.fr/Encadrement>

Fundamental research: "experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena or observable facts, without any practical application or use in direct view".

Industrial research: "the planned research or critical investigation aimed at the acquisition of new knowledge and skills for developing new products, processes or services or for bringing about a significant improvement in existing products, processes or services. It includes the creation of components of complex systems, necessary for industrial research, and notably for the validation of generic technologies, but excludes prototypes covered [in the definition of experimental development] [...] below".

Experimental development means "the acquiring, combining, shaping and using of existing scientific, technological, business and other relevant knowledge and skills for the purpose of producing plans and arrangement or designs for new altered or improved products, processes or services. These may also include, for example, other activities aiming at the conceptual definition, planning and documentation of new products, processes and services. These activities may comprise producing drafts, drawings, plans and other documentation, provided that they are not intended for commercial use.

The development of commercially usable prototypes and pilot projects is also included where the prototype is necessarily the final commercial product and where it is too expensive to produce for it to be used only for demonstration and validation purposes. In case of a subsequent commercial use of demonstration or pilot projects, any revenue generated from such use must be deducted from the eligible costs.

The experimental production and testing of products, processes and services are also eligible, provided that these cannot be used or transformed to be used in industrial applications or commercially.

Experimental development does not include the routine or periodic changes made to products, production lines, manufacturing processes, existing services and other operations in progress, even if such changes may represent improvements".

6.5. DEFINITIONS RELATIVE TO PROJECT ORGANISATION

For each project a single **coordinator** is designated and each of the other **partners** designates a **scientific and technical leader**.

Coordinator: person responsible for the scientific and technical coordination of the project, the setting up and formalising of the collaboration between the partners, production of the project deliverables, holding of the progress meetings and communication of the results. The coordinator is the chief contact for the ANR.

Partner: unit of a research organisation, company (see definitions relative to the structures in paragraph 6.6) or another legal person.

Scientific and technical leader: person responsible for production of the deliverables for each partner. The scientific and technical leader is the coordinator's chief contact.

Research organisation / company partnership project: research project for which at least one of the partners is a company and at least one of the partners belongs to a research organisation (see definitions in paragraph 6.6 of this document).

6.6. DEFINITIONS RELATIVE TO THE STRUCTURES

Research organisation: an entity, such as a university or research institute, irrespective of its legal status (organised under public or private law) or means of financing, whose primary goal is to conduct fundamental research, industrial research or experimental development and to disseminate results by way of teaching, publication or technology transfer; all profits are reinvested in these activities, the dissemination of results or teaching. Companies that can influence such an entity, by virtue of their status as shareholders or members for example, shall have no preferential access to its research capacities or research results²².

The technical centres, associations and foundations, save duly justified exceptions, are considered to be research organisations.

Company: any entity, independently of its legal form, carrying out an economic activity. Economic activity means any activity consisting in offering goods and/or services on a given market²². This category includes entities engaged in craft activity or other activities on an individual or family basis, and partnerships or associations that regularly exercise an economic activity²³.

Small and medium-sized enterprise (SME): an enterprise that meets the European Commission's definition of an SME²³. More particularly, an SME is an independent company with up to 249 employees and a sales turnover of less than €50 M or a balance sheet total of less than €43 M.

Competitiveness cluster: an association of enterprises, research centres and training organisations in a given territory, engaged in a partnership approach (with a common development strategy) with the aim of creating synergies around innovative projects conducted jointly and targeting one or more given market(s)²⁴.

²² See European Community framework for State aid for research, development and innovation, OJEU 30/12/2006 C323/9-11 (<http://www.agence-nationale-recherche.fr/Encadrement>)

²³ See European Commission Guide of 1st January 2005 concerning the definition of small and medium enterprises. <http://ec.europa.eu/enterprise/policies/sme>.

²⁴ See <http://competitivite.gouv.fr/>

6.7. OTHER DEFINITIONS

Incentive effect: Having an incentive effect means, in the terms of the European Community provisions, that the funding must lead the beneficiary to intensify its R&D activities: it must have the impact of increasing the size, range, budget or pace of the R&D activities. The analysis of the incentive effect will be based on a comparison of the situation with and without the granting of funding, on the basis of the responses to a questionnaire given to the company. Various indicators may be used in this respect: total cost of the project, R&D personnel assigned to the project, project size, level of risk, increase in the risk of the work, increase in the R&D expenditure in the company, etc.

Company in difficulty: the companies in difficulty are defined in point 2.1 of the "Community guidelines on State aid for rescuing and restructuring firms in difficulty (2004/C 244/02)". A firm is considered to be in difficulty if it meets the following criteria:

- a) in the case of a **limited liability company**, where more than half of its registered capital has disappeared and more than one quarter of that capital has been lost over the preceding twelve months, or
- b) in the case of a **company where at least some members have unlimited liability** for the debt of the company, where more than half of its capital as shown in the company accounts has disappeared and more than one quarter of that capital has been lost over the preceding twelve months, or
- c) whatever the types of company concerned, where it fulfils the criteria for being subject of collective insolvency proceedings (**bankruptcy, winding up by court decision, safeguard procedure**).

Companies aged less than 3 years are only considered to be in difficulty when they fulfil the conditions for submitting a collective insolvency procedure (point c).

Lecturer-researcher research time: the time devoted to the project by lecturer-researchers is based on the research time (considered at 100%). Thus a lecturer-researcher who devotes all his/her research time to a project for one year shall be considered as participating to the extent of 12 person months. For the calculation of the complete cost, however, the person's salary shall be counted at 50%.

6.8. REFERENCE DOCUMENTS

The following reference documents that may be useful for the preparation of your project proposal are available on the ANR website:

DOCUMENT RELATIVE TO THE PROGRAMME PLANNING

A document presents the ANR's annual programme planning: <http://www.agence-nationale-recherche.fr/Programmation>

DOCUMENTS RELATIVE TO THE SUBMISSION OF PROJECT PROPOSALS

- Instructions for writing the **scientific document** and proposing a document template are available on the website page devoted to the call for proposals (address on page 1)
- The link to the **submission website** is available on the call for proposals website page (address on page 1).
- The user's guide for **on-line submission** (guide for submitting a project proposal on the ANR platform) is available on the "Frequently Asked Questions" page (<http://www.agence-nationale-recherche.fr/FAQ>)
- The **guide for establishing the budgets** of the project proposals submitted to the ANR call for proposals is available on the "Frequently Asked Question" page (<http://www.agence-nationale-recherche.fr/FAQ>)
- The code of ethics of the ANR project players describes the good practices in terms of ethics and professional conduct to be applied by all the players involved in the research projects submitted to and financed by the ANR to guarantee the end-purposes of the work, the respect of partners, people, animals, the environment and the studied objects: <http://www.agence-nationale-recherche.fr/CharteDeontologieSoumission>.

DOCUMENTS RELATIVE TO PROJECT FUNDING

The following documents are available on the page dedicated to the "financial regulations" (<http://www.agence-nationale-recherche.fr/RE>):

- the regulations pertaining to the conditions of allocation of ANR funding.
- the general conditions of grant award agreements²⁵,
- a model of the particular conditions of the grant award agreements²⁵.

A user's guide for **on-line finalising of the administrative and financial file** (guide to the financing phase on the ANR platform) is available on the "Frequently Asked Questions" page (<http://www.agence-nationale-recherche.fr/FAQ>).

DOCUMENTS AND INFORMATION RELATIVE TO THE SELECTION PROCEDURE

- The composition of the evaluation panels and steering committees is posted on line on the website page of the call for proposals (address on page 1) when the selected projects are published.
- The functional procedures of the evaluation panels and steering committees are available on the page dedicated to the committees (<http://www.agence-nationale-recherche.fr/Comites>)

The code of ethics is available by following the link: <http://www.agence-nationale-recherche.fr/CharteDeontologieSelection>.

²⁵ To be consulted by the end of 2012.