Date of opening of the Call of Proposals: 23/12/2010

VIABILITY AND ADAPTATION OF PRODUCTIVE ECOSYSTEMS, TERRITORIES AND RESOURCES FACE TO GLOBAL CHANGES

AGROBIOSPHERE

ERANET ICT-AGRI, ET CARTOBIOSHERE

2011 Edition

Call for proposals closing date

31/03/2011 *at 13h00 Paris local time*

Call for proposals publication address

http://www.agence-nationale-recherche.fr/Agrobiosphere-2011/

SUMMARY

This program is a consequence of ADAGE Workshop on adaptation to climate change, by looking at local scales (the ANR "Global Environmental Change and Society" program supports all major scales), expanding the problem to all the global changes and focusing on productive systems. AGROBIOSPHERE deals with athropic ecosystems, managed for food production or non-food use: agriculture and stockbreeding, forestry, fishing and aquaculture.

The world biosphere will confront to future major changes (climate change and change of the chemical composition of the atmosphere and ocean, anthropogenic pressure on biodiversity, disruption of biogeochemical cycles). It will induce important consequences to which adaptation will be necessary. Productive systems, territories and natural resources will also have to adapt to other important constraints: relative scarcity of fossil energy, of water, of arable land, of mineral resources for manufacture of fertilizers, social protest against conventional farming techniques or innovative ... Moreover, the needs of societies continues to grow, and ecosystems will increasingly be in demand. This tension between increasing demand and rising constraints might create new crises.

Therefore, in this context, it is necessary to organize transitions to new sustainable production systems. Technologies and social organization forms will have to evolve, and this evolution should, on the one hand, be based on a better understanding of the ecological functioning of productive systems and, on the other hand, should facilitate adaptation to global changes, to technological and organizational innovations as well, allowing to anticipate the effects. The program aims to expand the range of technology, economic and social solutions to be mobilized for solving the problems of viability and adaptation of productive ecosystems facing global changes, and more generally to support the conception and application of adaptive trajectories for productive systems and territories.

KEYWORDS

Agriculture, ecological intensification, agriculture of high environmental value, stockbreeding, fisheries, aquaculture, forestry, ecology, anthropic ecosystems, adaptation, global change, sustainability, information and communications technology, precision agriculture, natural resources, biogeochemical cycles , biological control, water systems, landscapes, territories, protected areas, biosphere reserves, public policy, collective management.

IMPORTANT DATES

CLOSING OF THE CALL FOR PROPOSALS

The project proposals must be submitted on the ANR submission web site - see address in link on page 1 - before the call for proposals closing deadline:

ON 31/03/2011 À 13H00 (1 P.M.) (PARIS TIME)

SIGNED AND SCANNED DOCUMENT

Each partner must confirm participation in the proposal by signing its administrative and financial document (the "submission document"). This document is generated from the ANR submission site after closure of the call for proposals. Once scanned in PDF format, the coordinator must upload it to the submission web site no later than:

29/04/2011 at 13h00 (1 p.m.) (Paris time)

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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/documents/uploaded/2007/reglement-modalites-attribution-aide.pdf) before submitting a research project proposal.

CONTENTS

1. Context and objectives of the Call for Proposals

1.1. Context

The AGROBIOSPHERE program is a consequence of ADAGE Workshop (Adaptation of Agriculture to Global Climate Change- texts available on the ANR website) by looking at local scales and at the productive ecosystems. It expands the issue of adaptation of territories and ecosystems to a set of "global changes", affecting both the environmental area and economical and social areas as well. It also connects with the issue of sustainable development by questioning the economic, social and environmental pathways of evolution and the adaptation strategies.

The biosphere, as it is used and managed by the societies and especially by agriculture (broadly defined, including other land primary production and sea production also), is and will be importantly transformed. Accordingly, we will have to anticipate a set of adaptation constraints: climate change and the need to sequester carbon, the need to preserve all components of biodiversity and its functionality (which is reflected, for example, in projects of "green and blue corridors"), the need to conserve water in continental ecosystems and preserve its quality, the rise of energy prices, the dwindling potential of fossil fertilizer, environmental or health impacts and the social contestation of pesticide molecules, some aspects of veterinary medicine, landscape protection, etc.

Moreover, the demand and the needs of societies are increasing: food, energy, or materials of biological origin... These needs create productive opportunities. The combination of the pressure constraints and market opportunities linked to the needs, encourages the societies to devise options to anticipate future changes. These expectations have first to stimulate research and innovation, which are called to make transitions towards new systems that have to be both productive and sustainable. In terms of technical innovation, the currently preferred path is mainly given by the option of "scientific ecology for productive systems", often associated with the development of new practices to precision agriculture and applications of information and communication technology (which are the subject of two ERANETs funded by ANR).

Research and innovation do not concern only technologies and practices; they must also invest the economic, social and organizational processes, both to improve innovation and to identify economic and social tracks and public policy instruments which may contribute to the adaptation of productive ecosystems and territories. Research should also take into account the political, social and cultural context in which these issues arise at both global and local scales.

1.2. Programme objectives

In the coming decades, ecosystems used by humans will be highly requested to both feed a world population whose growth should stop at mid-century, to propose solutions to the depletion of fossil resources by producing bioenergy and biomaterials, and finally, to better

manage the numerous ecological services associated with these ecosystems and which contribute to human welfare in the context of sustainable development particularly concerned with justice and reduction social inequalities.

Meeting these high and multiple expectations is already a major challenge. But answers must also be elaborated in a rapidly changing context under the impact of global environmental changes (climate change, changes in land use, water pollution, continental and marine biodiversity losses), as well as under expected economic and social changes in the mid- or long-term (higher energy prices, globalization of trade, price volatility, dynamic and demographic transitions, mobility, food transitions, urbanization - especially in coastal areas, etc..). These multiple changes, which are grouped under the term "global change", constitute a "system of constraints" in the sense that the various phenomena involved are linked by multiple interactions that may amplify the effects (eg relations between climate change, biodiversity loss and migration, or between volatility of energy prices and volatility in agricultural prices...). We have also to add (varying in different regions of the world) emergence of new negative attitudes against science and technology, which can play a significant role in the choice of “appropriate” solutions. In addition, in many countries, land tensions on farmland tenure may occur, sometimes with an influx of foreign capital. The consequences of these processes can be significant both environmentally and socially.

In a given territory, the scenario resulting from the combination of these various evolutions, and to which the local production systems and societies need to adapt, will be specific and related to a combination of assumptions about the external environment and the territory itself. The notion of territory is used here as an organized space with some consistency and some physical, ecological and social specificity.

The purpose of the AGROBIOSPHERE program is, firstly, to better understand how these global changes will influence the fate of continental and marine productive systems, taken at different levels of organization, how these systems will react, how these reactions will allow (or not) to maintain or improve their viability and sustainability and, secondly, to understand the projection of these systems in the future, to develop methods and tools to support and facilitate these changes in social and cultural differentiated situations.

1.3. CALL FOR PROPOSALS OBJECTIVES

Compared to this broad thematic area, the AGROBIOSPHERE program has identified several options for 2011, to clarify the nature of the expected proposals.

1. The concept of productive systems (or ecosystems used by humans) includes all forms of eco - agricultures, such as horticulture, arboriculture, forestry, livestock, aquaculture, fishing - using continental and marine ecosystems, resources and territories to which they are attached, and actors who manage them. It refers to all forms of production, from most extensive to more intensive, and the entire planet. It integrates all dimensions of both material and intangible dimensions, including cultural. The concept of production applies to all goods and services (including ecosystem services as seen in the Millennium Ecosystem Assessment), commercial or non-commercial farmers in the social and cultural diversity of societies.

2. The notion of adaptation is seen here as a process of change resulting from natural dynamics or management actions aiming to take into account new constraints, implicitly or explicitly. It will be up to the proposed projects to question the relevance and sustainability (economic, environmental and social) strategies developed by the actors.
3. The program will emphasize studies on intermediate scales; this means at the level of territorial units in which different actors interact effectively, and are likely to define and implement collectively adaptation strategies. The major production areas, for example, are a scale that seems to have been little studied. Studies at individual operators levels will be acceptable if they fall under a logic of understanding and/or conception of this collective dynamic, or fit in collective local dimensions and economic and social interdependences it implies.
4. This program will be particularly attentive to take into account the complexity of global change. Trends and scenarios to be studied or built, should not be reduced arbitrarily, to the variation of one component of global change (climate, biodiversity, migration, etc…). On the contrary, proposers should explain and justify the combinations and interactions between these components (including references to global scenarios) that they choose in the framing of their projects.
5. For similar reasons, the projects must take into account the uncertain nature of these scenarios and study the consequences of this uncertainty on adaptation strategies. In this regard, studies on the various sources of uncertainties (related to larger socio-economic responses of productive systems to global change, the dynamics of climate, etc...) and the formation of mental representations, individual or collective, global change will be appreciated.
6. The program is not restricted to define "desirable states" for a territory and also aims to examine how actors define these states, the means that they give, the projects they develop and the difficulties encounter to initiate change and make the transition.
7. Although the concern of the program is to establish productive systems through better knowledge and use of the ecological functioning of the territories, it does not give priority to a particular option, among the many terms expressing this concern : HVE (high environmental value), HVN (high natural value), AEI (ecologically intensive agriculture), AB (organic agriculture), agro ecology , AR (reasoned agriculture or integrated agriculture), ecosystemic approaches to fisheries and aquaculture... Proposals, looking both at concepts and concrete performances, will be appreciated.
8. The AGROBIOSPHERE program focuses on “production” component of food systems and non-food products. Approaches on the evolution of other components of these systems (processing, distribution channels, consumption, and waste management) are addressed as such by the ANR ALID program (sustainable food systems). However, some changes in these components, such as determinants related to pathways that link together different spatial scales, may be regarded as constraints

or external factors which need to adapt production systems and/or affecting the adaptation capacities of these systems.

Expected outputs

The overall program aims to:

- Promote the development of interdisciplinary knowledge at the interface between biophysical sciences applied to the management of ecosystems and territories (agronomy, ecology, plant science and animal), environmental and earth sciences (climatology, biogeochemistry) and social sciences (anthropology, economics, human geography, sociology, legal and political science), aiming for operational implementation of the results.
- Extract knowledge bases about linkages between climate change, land and marine areas use, biodiversity, biogeochemical cycles, economic, social and environmental performance of productive systems (agriculture, aquaculture, forestry), transformation of value systems, local economic development, management and organization of the territories.
- Allow to develop realistic models, incorporating the behaviour of individuals and societies, the evolution of ecosystems and territories in the context of global change to continue the effort towards the ecological intensification of production systems taking into account the challenge of adapting such systems in the context of sustainable development.

2. THEMATIC LINES

The Call for Proposals includes 3 scientific lines, a "scientific and technical challenge" and indicates the existence of an ERANET: ICTAgri.

2.1. THEMATIC LINE 1 DYNAMICS OF ECOSYSTEMS AND TERRITORIES AND REPRESENTATIONS OF CHANGES INDUCED BY GLOBAL CHANGES.

This axis of the Call for Proposals aims to encourage analytical or descriptive research to understand and represent the processes and dynamics of co-evolution, at medium and long term horizons, of social systems and ecosystems across territories and resources, so viability and sustainability could be assessed.

One of the main methodological issues concerns the need for a systemic perspective, both for the territory (as an ecological, social, economic and socio-technical system) for all the ecological dimensions of global change (climate, biodiversity, changes in the quality of water resources and soil, habitats ...). It also concerns the ability to represent the interactions between social, technical and ecological processes. Analyses can refer to a perspective of historical analysis and to a prospective approach. They may develop interactions between productive processes and environmental services. They also may develop analysis of changes in practices and technological processes, and take into account the diversity of territories and societies transformations at different scales.

The tools for representation raised can combine qualitative and quantitative approaches, processes of observation, experimentation, modelling scenarios, especially to be able to link the evolution of systems considered and the determinants of global changes at other scales (climate change scenarios, for example, but also other factors of global change related to socio-economic evolution at a world scale...). The proposals should not only look at the dynamics of societies and local production systems, but they have also to look at linkages between determinant factors, at different scales.

This understanding of the specific dynamics of socio-techno-ecological determinants and their main aims put into perspective the concept of "management" of these systems and the ability of the instruments of collective action and public action to alter their trajectory. But, this is never to limit the analysis to a narrow monographic perspective of case studies: the descriptions and analysis of trajectories should allow evaluations of viability, sustainability, resilience or vulnerability of the systems in the long term. Analysis will thus allow the articulation with other aspects of research focused on the levers of inflection of the trajectories (see line 2). They will also seek a generalization (comparability with other situations or land, or some degree of generalization of the described processes).

These descriptions and analysis will focus particularly on the question of transitions: What are the impacts of global change on the studied systems? How can their adaptations occur in these systems? How individual strategies of actors and cross externalities between uses, can lead to changes in the system that does not necessarily correspond to the original intentions? How these individual strategies are locally coordinated, confront, and aggregate to form collective local strategies? How have they managed systems of collective action to influence

the trajectories? What is their ability to influence social and ecological systems changing relatively to other determinants? How to form and disseminate technological packages that guide the technical development to more or less reversible situations? How innovations (technical or organizational) or emerging processes may change the scale? To what extent these changes - and policies that accompany them - do influence the competition or complementarities (or solidarity) between territories? How do they enhance the specialization or, conversely, diversification of the studied economic and social systems?
The analyses of these paths will also seek to highlight the distinctions between temporal dynamics of various processes, including the consequences of rapid changes and short term (the "crises" in the broadest sense, extreme weather events, sudden shifts in prices food or energy, etc..) on the sustainability or long-term viability. How inflections of trajectories in the short term, intentional or not, lead to long-term effects which can be potentially very different from the initially observed effect? Could the changes allowing better adaptation or improvement of economic, social or environmental performance at short term, lead to long-term negative impacts on adaptation, vulnerability, resilience, or sustainability? How can we articulate in this descriptive perspective the different kinds and different degrees of uncertainty between the short term and long term?

2.2. THEMATIC LINE 2: DEVELOPMENT OF STRATEGIES FOR ADAPTATION TO GLOBAL CHANGES

Global changes in human societies generate the need for a capacity to anticipate and explore new worlds. The role of research is to explore, anticipate, create, imagine how to adapt what exists - but also what does not already exist - and explore the range of possibilities, those who can happen, but also those that we could invent and mobilize to keep control of the future and move away threats.
In view of the adaptation of existing productive systems to changes, line 2 focuses specifically on technology and engineering of socio-technical and organizational processes of innovation as well as their implementation across the territories. The rational evolution of the multifunction performance of systems should allow the twin challenges of increasing demand and maintaining the capacity of ecosystems to deliver services.
The research will use the concepts of agricultural and ecological engineering, land engineering or public policy to develop operational experiences, but also to enlighten the preliminary and necessary understanding to actual and future situations: how the qualification and quantification of goods and services problems are questioned at intermediate scales? How to organize actors and technical actions? How to concept and build between actors multifunctional shared visions across the country? How to evaluate the performances of these collective initiatives and what information systems, indicators, criteria, tools can be put in place to achieve this? This research will contribute to the development of new technologies, strategies, incentives tools or for managing transitions and adjustments to global changes, for example, adjust fertilization, manage more efficiently the capacity of soils, weeds, vegetation cover, water, animal functions, diseases and pests, biogeochemical cycles of carbon and nutrients...

This research will also look at more integrative levels, at the management of biodiversity, at the esthetical and cultural dimension of landscapes, at the development of ecological solidarity between territories with a view to more sustainable systems. The research will address both the development of technical changes, the production of conceptual frameworks, of analytical tools, of models looking for new standards, of public policy instruments or devices for deliberation and action facilitating the collective meeting of scientific knowledge and practical knowledge and reciprocal learning. Research in the legal field (adequacy of legal status of production systems to tomorrow's challenges, changing status of natural resources - soils, biodiversity - to promote sustainable management, etc..) will also be relevant.

By structuring the components and direct and indirect interactions of particular innovations or combinations of these, crossing the scales of approaches to and from the territorial dimension, the purpose is to seek solutions to improve and preserve, facing global change, eco-efficiency of productive systems and territories. Beyond the conventional notion of efficiency of an intensification process, which tends to maximize a single objective of productive performance relative to some given factors, eco-efficiency refers to the effective accomplishment of multiple objectives by using an efficient mobilization of the resources of a territory (natural, human, material, financial, etc..) and enhancing the knowledge and expectations of participants to contribute adequately to the production of goods and services from ecosystems.

The adaptation to future constraints requires a better understanding of the leeway (especially in relation to specific dynamics of change envisaged in the line 1), of capabilities and limitations of adaptive components and system participants. It also requires evaluating ways and levels of technological and organizational options for balancing the short time needs and the long term management. This adaptation of production systems necessitates the production of knowledge and of new models. They rely as much on biotechnology knowledge than on knowledge acquired and to acquire by the actors of the territories. In view of the issues that are developed around systems approaches and responses it can make to address the complex issues posed by global change on agricultural and forest lines (or other productive systems), a challenge to put out is about the nature and the development of appropriate cognitive systems. These are fundamental to any approach of understanding integrative and systemic situations shared with societies. ICST (information and communication science and technology) adapted to "green" management of viability give, in this respect, the choice of tracks and are part of the program.

2.3. THEMATIC LINE 3: THE ROLE AND PLACE OF PROTECTED ECOSYSTEMS

The AGROBIOSPHERE program wishes to identify a specific focus devoted to "protected" areas. This term encompasses the various forms of conservation of natural heritage, whether they are strictly assigned to duties of protection or they combine the objectives of economic and social development with responsible management of this natural heritage. The role of these areas within the territories and the link with targeted productive ecosystems by this

call may constitute an important component of adaptive strategies and sustainability of these territories.

This line aims to address such questions as:

- Regardless of their other functions (esthetical, recreational, genetics ...), have protected areas a role in the singular adaptation of territories to global change? Their definition, their construction are they subject to confrontation between local knowledge and expert knowledge referring to the concept of adaptation to global change? How their emergence alters the conception of public policy instruments? Are they special places with a greater ability to adapt compared to the territories surrounding them?
- Among the forms of protection or differentiated management existing (full biological reserves, nature reserves, biotope protection orders, Natura 2000, Biosphere Reserves, National Parks, Regional Nature Parks, the various areas of protection, Ramsar areas, etc.). , which ones would be most appropriate - and what criteria - to respond to global change, given their specific objectives (conservation of flagship species, or outstanding habitats), their size, their management tools (voluntary agreements, charters, contracts, management plans ...), their modes of governance (regulatory or contract management, management committees, steering committees ...)?
- Assuming that nature conservation is to preserve its potential for evolution and adaptation, does it leads to defend low anthropic areas to conserve natural dynamics, or to redesign highly anthropic systems to find a dynamic adjustment to global changes?
- Does (or not) ownership of protected areas by local actors increase their potential for adaptation? Have the natural dynamics a greater future than the conducted, regulated or concerted dynamics? What should be the forms of association (overlap or separation more or less marked) in both spatial and organizational between protected areas (of all laws and all forms) and productive systems (in their diversity)?
- Finally, how the insertion of these protected areas in a network that connects them ("green and blue corridors" ...) facilitate or not their adaptation to global change?

2.4. THEMATIC LINE 4: "CARTOBIOSPHERE"

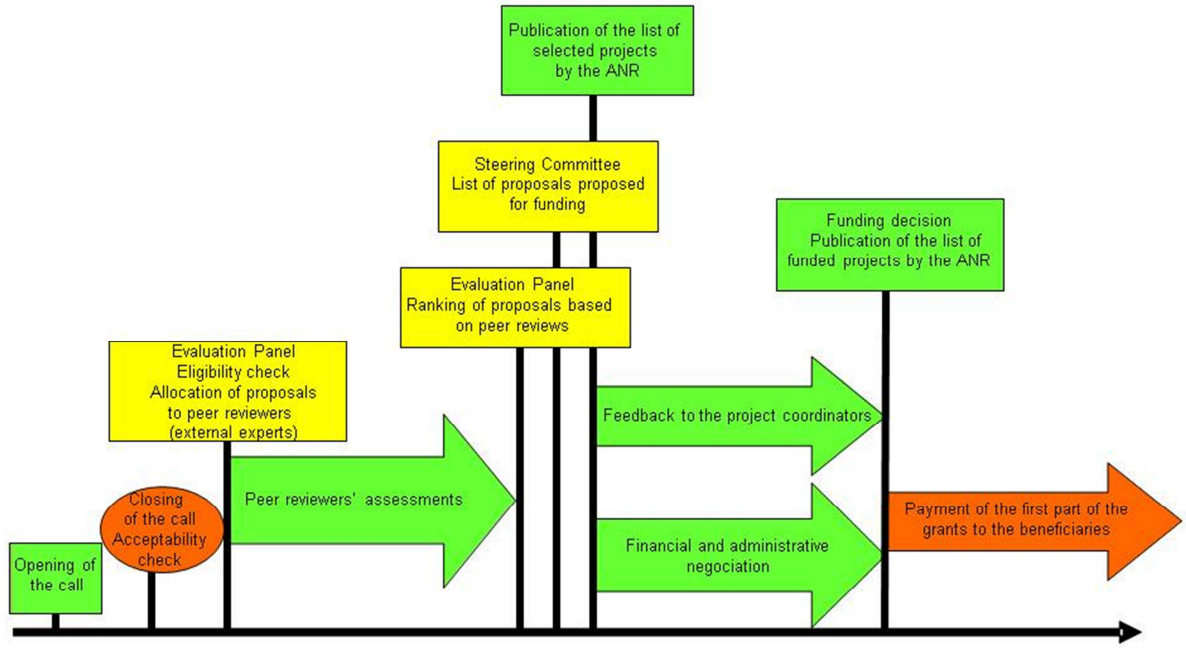
This is a scientific and technical challenge, a process which a Call for Proposals may be used if a specific issue is identified. The challenge is to define a simulation tool incorporating a lot of cartographic knowledge and which can help in the definition and implementation of agro-ecological engineering projects across a real territory of small dimension (eg, a group of municipalities) whose dynamics in response to global changes could be simulated. The scale of the agricultural landscape (in the ecological sense of the concept of landscape) has indeed been identified as central, and as yet too little discussed in terms of innovative practices for the management of productive ecosystems.

Adapting to global change of a territory, its ecological landscape, its land, its development (green and blue corridors), decisions of different partners can be done according to different associated logics for example: a logic of water retention in the watershed, a logical assurance of water quality, a sense of motorization and mechanization (manoeuvrability of equipment),

a logical control against erosion, a logic of ecological crop management in the plots, a logic of landscape aesthetics, a sense of farm income, etc. The objective is to develop simulations of various choices across the agricultural landscape (eg hedges location choice, ecological corridors, grasslands, forests ...) based on a combination of these logics (and possible determinants of public policies or programs at other scales), and identify cartographically the impact (eg on water channels, the roughness of the landscape, biodiversity ...). It will also evaluate the performance of these choices on different sustainability criteria outlined above. Another example of choice: farms may wish to change their farming techniques along the lines of "intensive ecology " (no tillage, cover crops, use of legumes, biological control ...). Integrative mapping could also help to identify the effects on the cycles of mineral elements (nitrogen, phosphorus) or erosion...

The final intention is to build a support tool in the collective innovation process and bargaining process between partners in order to test the extent to which individual decisions could agree to move towards the production of efficient ecological services. In this perspective, it would be useful that the simulation show the gains and losses of different actors under different assumptions of landscape evolution. This tool should enable to understand what are the possibilities, but also the brakes, for implementation of collective territorial strategies for better adaptation to global change and improving the sustainability of productive systems at this scale. The approach of mobilization of this tool in collective processes (innovation and learning, or negotiation) will be explained.

3. EXAMINATION OF PROPOSALS



The selection procedure involves the following steps:

- Examination of the **acceptability** of the proposals by the ANR in accordance with the criteria stipulated in § 3.1.
- Examination of the **eligibility** of the project proposals by the evaluation panel in accordance with the criteria stipulated in § 3.2.
- Peer reviewers (external experts) are appointed by the evaluation panel.
- Peer reviewers issue their assessments based on the evaluation criteria specified in § 3.3.
- The evaluation panel reviews research proposals upon reception of the peer reviewers' assessments, and drafts a scientific evaluation report.
- Examination of the project proposals by the steering committee, which proposes a list of projects to be proposed for funding by the ANR (consult the steering committee grid on the web page dedicated to the call).
- Publication of the list of projects selected by the ANR (main list and possibly reserve list) on the ANR web site dedicated to the call for proposals.
- Sending the coordinators of non-selected projects a consolidated panel evaluation report.
- Finalising of the scientific, financial and administrative files for the selected projects.

- Publication of the list of projects selected for funding on the ANR web site 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 2).

The respective roles of the principal actors of the selection procedure are as follows:

- The peer reviewers (external experts) designated by the evaluation panel issue a written assessment for all proposed projects. Each project is reviewed by at least two experts.
- The evaluation panel comprising members of the research communities concerned, whether French or foreign, whose fields of expertise correspond to the requirements of the call and from the public or private sectors. The evaluation panel is mandated to evaluate the projects on the basis of the external experts' assessments, and to rank them into three categories: A (priority), B (non-priority), and C (rejected).
- The role of the steering committee, which comprises qualified prominent figures and institutional representatives, is to propose a list of projects to be funded by the ANR in accordance 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 the rules pertaining to the confidentiality and conflict of interest. The ANR code of ethics is available on the ANR web site[1].
The operational and organisational procedures that apply to evaluation panels and steering committees are stated in documents available on the ANR web site[2].
Once the list of selected projects has been published, the compositions of the evaluation panels are available on the ANR web site[2].

[1] http://www.agence-nationale-recherche.fr/DocumentsAgence
[2] http://www.agence-nationale-recherche.fr/Comites

3.1. ACCEPTABILITY CRITERIA

IMPORTANT

Project proposals that do not meet the acceptability criteria will not be submitted to the evaluation panel and will not be granted ANR funding under any circumstances.

1) The electronic and scanned **submission file** (see content in § 5.1) must be submitted **duly completed within the deadline,** and produced **in the format requested**.
2) **The scientific document** produced in the format provided **must not exceed 40 pages**, appendices excluded.
3) The project **coordinator** must not be a member of the evaluation panel or the programme steering committee.
4) The project **duration** must be between 24 months and 48 months.
5) **Minimum number of partners** (including the coordinating partner): **X**
6) A project proposal **identical to a proposal already submitted to another ANR programme with the same year of edition** will not be acceptable.

3.2. ELIGIBILITY CRITERIA

IMPORTANT

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

1) The project must **enter into the scope** of the call for proposals described in § 2.
2) **Type of research**: this call for proposals is open to:
   - Fundamental research projects[3],
   - Industrial research projects[3],
   - Experimental development projects[3].
3) **Consortium composition** : This call for proposals is open to:
   -projects with partnership between research organization / company. The consortium must have at least two partners, with at least one from each of the following categories:
   i. Research organization (university, EPST, EPIC, ...)
   ii. Enterprises
4) -projects with collaborative research. The consortium must have at least two partners, with at least one from research organization (university, EPST, EPIC, ...).

[3] See definitions of research categories in § 6.4.

3.3. EVALUATION CRITERIA

IMPORTANT

The submission files, appendices excluded, must contain all the information necessary for the evaluation. Only project proposals that satisfy the acceptability and eligibility criteria will be evaluated according to the criteria specified below.

1) **Relevance of the proposal with respect to the call for proposals orientations**
   - suitability with respect to the thematic lines of the call for proposals (cf. § 2),
   - suitability with respect to the recommendations of the call for proposals (cf. § 3.4).
2) **Scientific and technical quality**
   - scientific excellence in terms of progress of knowledge with respect to the state of the art,
   - innovative character in terms of technological innovation or prospects of innovation with respect to the existing situation,
   - overcoming technological barriers,
   - integration of the different disciplinary fields.
3) **Methodology, quality of project construction and coordination**
   - positioning with respect to the state of the art or technological innovation,
   - 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 management plan (experience, project financial and legal management), involvement of the coordinator,
   - strategy for the exploitation of the potential project results.
4) **Overall impact of the project**
   - Potential for utilization 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 stated way of using the results,
   - benefit for society, public health, etc.
   - when appropriate, the response to questions of environmental impact.
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 private partners in the project.
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 personnel resources,
- justification of the temporary personnel resources (trainees, PhD students, post-doctoral students),
- proper estimate of the sum for investments and equipment purchases,
- proper estimate of the other financial items (missions, subcontracting, consumables, etc.).

3.4. IMPORTANT RECOMMENDATIONS

Any divergence from these recommendations is not necessary penalizing but must be clearly explained.
The evaluation panel will judge the appropriateness of the divergence from the recommendations.

RECOMMENDATION CONCERNING PERSONNEL INVOLVEMENT

- The project proposals shall ensure a balance between permanent personnel and temporary personnel, as indicated in §4.

RECOMMENDATION CONCERNING "FOLLOW-UP" PROJECTS

- Project proposals following on from previous project(s) financed by the ANR shall include a detailed report of the results obtained and clearly describe the new problems posed and the new objectives.

RECOMMENDATION CONCERNING PROJECTS INVOLVING FOREIGN PARTNERS WITHOUT A PRIOR BILATERAL AGREEMENT SIGNED BETWEEN THE ANR AND A FOREIGN FUNDING AGENCY

The foreign partner must ensure his/her own financing and explicit in the scientific and technical proposal:

- Whether the activities are carried out with already existing funds and justify
- Whether the foreign partner has already received national funding for its contribution to the proposed project
- If not, indicate whether he/she requested a national funding for his/her participation in the project by sending out the same scientific proposal to a funding organisation of his/her country. In that case provide the complete details of the funding organisation as well as the name, function, e-mail and phone number of the programme director in his/her country.

For the case of teams in Least Developed Countries (LDCs), (thus excluding all others), these teams will be financed in the form of service delivery to a french team in requirements of

financial regulations of the ANR ("beneficiaries may have done the work by others outside of the project. The cost of the benefits figure so individualized in the expenses of operation and must remain less than or equal to 50% of overall cost entering the base of support per project, unless waived by the director of the agency under reasoned request of the beneficiary "), or if the foreign partners are funded by the AIRD.

French foreign centers and CGIAR research centers are eligible for funding from the ANR.

4. PARTICULAR FUNDING PROVISIONS

This section complements the general provisions set forth in §6.1.

CONDITIONS FOR FINANCING TEMPORARY PERSONNEL

Temporary personnel (trainees, post-doctoral students, fixed-term contract employees, temporary employees, etc.) may be assigned to projects in this programme. Except for special cases, the manpower (in person months) funded by the ANR for the project as a whole should not exceed 50% of the total manpower engaged in the project.

RECRUITING PHD SCHOLARSHIPS

Doctoral students may be funded. However, their number should be very limited so as not to depend only of recruiting doctoral students, and not to open opportunities for theses subjects on topics that do not display future prospects. Moreover, funding by the ANR does not prejudge the agreement of the graduate school. Doctoral students are counted as temporary staff for the application of the "conditions for the financing of temporary personnel" defined above.

OTHER FUNDING CONDITIONS

It is recommended not to exceed an amount of € 500k. However, if the project requires reasonably overrun cost, even important, since it is not a term of ineligibility, the project will normally be assessed. Its budget will be particularly justified.

5. SUBMISSION CONDITIONS

5.1. CONTENT OF THE SUBMISSION FILE

The submission file, appendices excluded, must include all the elements necessary for the scientific and technical evaluation of the project. It must be completed before the submission deadline, the date and time of which are indicated on p. 2 of this call for proposals.

IMPORTANT

No additional elements will be accepted after the submission deadline, the date and time of which are indicated on p. 2 of this call for proposals.

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

a) The project "administrative and financial document" (called submission document). It is generated by the submission site after entering the required information on line.

b) The "scientific document" is the scientific and technical description of the project. The document template is available in Word format on the ANR web site on the page dedicated to the call for proposals. Once completed, this document is to be uploaded to the submission site in the "Scientific document" tab. This document must not exceed 40 pages in the proposed format, appendices excluded.

It is recommended to produce the scientific and technical description of the project proposal in English. In the case that the scientific and technical description is drawn up in French, a translation in English may be requested within a deadline compatible with the evaluation process.

5.2. SUBMISSION PROCEDURE

1) SUBMISSION SHALL BE MADE ON LINE ON THE DEDICATED SITE ACCESSIBLE FROM THE ANR WEB SITE AT THE ADDRESS INDICATED ON PAGE 1:

- before the date indicated on page 1,
- link available starting from 27/01/2011 on the call for proposals publication page of the ANR web site.

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

Only the information present on the submission web site at the time of the closure of the call for proposals will be taken into account.

ANY FILE CONTAINING A SCIENTIFIC DOCUMENT AND A POSITIVE FUNDING REQUEST WHEN THE CALL CLOSES WILL BE CONSIDERED SUBMITTED, AND IN THIS CASE AN ELECTRONIC ACKNOWLEDGEMENT OF RECEIPT WILL BE SENT TO THE COORDINATOR.

2) TRANSMISSION OF A SCAN (in PDF format) of the administrative and financial document (called submission document).
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 French partners, then scanned (in PDF format) and uploaded to the ANR submission site by the French project coordinator no later than the date indicated on page 2.

Reminder: the scientific representative and the direction (or any person authorized to sign on behalf of the organisation) of each public organisation or research foundation that is partner in a project **must sign** the administrative and financial document (submission document).

5.3. SUBMISSION RECOMMENDATIONS

It is strongly recommended:

- Not to wait until the submission deadline to submit the project;
- 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;
- To register the information entered on the submission site before leaving each page;
- To download the full project summary in Excel format from the "Summary tables" tab to verify the information entered on line;
- To regularly consult the website dedicated to the programme at the address indicated on p. 3, which contains updated information concerning the applicable procedures (submission site user's guide, budget preparation guide, glossary, FAQs, etc.);
- To contact the project officers by electronic mail at the address(es) indicated on p. 3 of this call for proposals.

5.4. PARTICULAR SUBMISSION CONDITIONS FOR THE APPLICATION FOR LABELLING BY A COMPETITIVENESS CLUSTER[4]

The application for project labelling by one or more competitiveness clusters is made from the submission site using the following procedure:

- When submitting the project proposal, the partner can indicate the intention to request labelling by one or more competitiveness clusters in the clusters tab.

[4] See additional provisions related to clusters in § 6.3.

- The coordinating partner must then download a prefilled form certifying project labelling by a competitiveness cluster and forward it to the cluster's governance structure.

Project partners are strongly recommended to contact the cluster in parallel to the project submission procedure.

5.5. PARTICULAR SUBMISSION CONDITIONS FOR PROJECT PROPOSALS IN COLLABORATION WITH ONE OR SEVERAL INTERNATIONAL TEAMS

This ERANET is intended to cover research involving applications of information and communication technology (ICT) in agriculture. It will be published on the website of the ANR.

5.6. ANR FUNDING

TYPE OF FUNDING

The funds allocated by the ANR to each partner will be provided as a non-refundable grant in accordance with the provisions of the "Regulations relative to conditions of allocating ANR funds", which can be consulted on the ANR web site[5].
ANR funding is limited to project partners residing in France, the associated international laboratories 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.

IMPORTANT

The ANR will not allocate funding of less than €15,000 to a project partner.

FUNDING RATES FOR PRIVATE ENTERPRISES

The maximum ANR funding rates for private enterprises[6] for this call for proposals are as follows:

Type of research	Maximum funding rate for SMEs	Maximum funding rate for companies other than SMEs

[5] http://www.agence-nationale-recherche.fr/documents/uploaded/2007/reglement-modalites-attribution-aide.pdf
[6] See definitions relative to structures in § 5.11.

Fundamental research[7]	45% of eligible expenditure	30% of eligible expenditure
Industrial research	45 *% of eligible expenditure	30 % of eligible expenditure
Experimental development	45 *% of eligible expenditure	25 % of eligible expenditure

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

IMPORTANT

The incentive effect[8] of allocating ANR funding to companies other than SMEs must be established. Consequently, non-SMEs selected for funding under this call will be asked to provide the information necessary to evaluate this aspect during the finalizing of the administrative and financial files.

5.7. REGULATORY AND CONTRACTUAL OBLIGATIONS

CONSORTIUM AGREEMENTS

For public / private partnership projects involving a research organisation and a private enterprise the partners must conclude, under the supervision of the project coordinator, an agreement specifying:

- the distribution of the tasks, human and financial resources and deliverables;
- the sharing of the intellectual property rights linked to findings obtained within the framework of the project;
- the project start and end dates;
- the conditions of publication / dissemination of the results;
- the application and transfer of project findings.

These agreements shall enable the existence of any indirect financial support entering into the calculation of the maximum level of funding authorized under the European Community

[7] See definitions of research categories in § 5.9.

[8] See definition of the incentive effect in § **Erreur ! Source du renvoi introuvable.**

Framework for state aid for research and development and innovation (referred to hereinafter as the "EC Framework") to be determined.

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

- The beneficiary company, working within the EC Framework, underwrites all the project costs;
- where results cannot be protected by intellectual property rights, the beneficiary research organisation is free to use and disseminate its results;
- where results can be protected by intellectual property rights, the beneficiary research organisation retains ownership of these rights;
- the beneficiary company, working within the EC Framework, that benefits from a result developed by a beneficiary research organisation remunerates the latter in keeping with market conditions.

The project coordinator will send a copy of this agreement to the ANR along with a statement signed by the partners certifying the compatibility of the agreement with the provisions of the EC Framework and the convention(s) defining the conditions of project performance and financing. **The documents shall be sent within twelve months after the grant agreements come into force.**
The statement must therefore certify either that the consortium agreement fulfils one of the conditions listed above, or that all the intellectual property rights concerning the results and the rights of access to these results are allocated to the various partners in a way that reflects their respective interests and their level of participation in the project, including financial and other contributions. Failing this, the consortium agreement may be considered as a form of indirect funding, leading to a reduction in the percentage of direct funding allocated by the ANR.

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 project submission and publication of the list of selected projects.

5.8. ADDITIONAL PROVISIONS

COMPETITIVENESS CLUSTERS[9]

The partners of a project can have their project labelled by one or more competitiveness clusters. The labelling of a project by a cluster reflects the acknowledgement of the interest of the project with respect to the strategic orientations of the cluster.
As the project labelling application requires the disclosure of strategic, scientific and financial information to the cluster, the partner behind the labelling initiative is asked to obtain the agreement of the other project partners beforehand. In the ANR selection process, the steering committee is informed if a project has a cluster label.
If the project is financed 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 follow-up and assessment operations.

The ANR may allocate additional funding to the partners of a labelled project [10] if they are situated in the region(s) of the cluster(s) concerned.
If the partner is a company, this additional funding complements the initial project grant.
If the partner is a public research laboratory or a legal entity that is not subject to the EC Framework rules, this additional funding must be allocated to expenses that relate to the competitiveness cluster's activity (oversight and coordination, technological watch, project engineering, etc.)[11].

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 tax credit for projects selected by the ANR may be allocated to companies as additional funding 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 French research tax credit (called 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):

[9] See definition of competitiveness cluster in § 6.3.
[10] A project can be labelled by several clusters; in this case the geographical perimeter considered will be that covered by all the clusters having labeled the project.
[11] To learn more about the conditions of use of the additional funding, see: http://www.agence-nationale-recherche.fr/partenariats-public-prive/poles-de-competitivite/regles-de-calcul-et-d-utilisation-du-complement-lie-au-label/

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

The completed and signed form is to be returned by registered mail with acknowledgement of receipt to the following address:
ANR, Département DPC/CIR, 212 Rue de Bercy, 75012 Paris cedex
The employees who examine the research tax credit (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).

5.9. DEFINITIONS CONCERNING THE DIFFERENT RESEARCH CATEGORIES

These definitions figure in the EC Framework for state aids for research and development and innovation[12]. The following meanings apply:

Fundamental research: "experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena or observable facts, without any direct practical application or use in 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 comprises the creation of components of complex systems, which is necessary for the industrial research, notably for generic technology validation, to the exclusion of prototypes covered [in the definition of experimental development] […]".

Experimental development: "the acquiring, combining, shaping and using of existing scientific, technological, business and other relevant knowledge and skills for the purpose of producing plans and arrangements 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. The 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.

[12] See JOUE 30/12/2006 C323/9-10
http://www.agence-nationale-recherche.fr/documents/uploaded/2007/encadrement.pdf

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."

5.10. DEFINITIONS CONCERNING PROJECT ORGANISATION

For each project, a single coordinating partner is designated, and each of the other partners designates a scientific representative.

Coordinating partner: research organisation or enterprise to which the coordinator belongs.

Coordinator: the person responsible for the scientific and technical coordination of the project, the setting up and formalizing 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 and its support unit. The organisation to which the coordinator belongs is called the coordinating partner.

Partner: Unit of a research organisation or of an enterprise.

Scientific representative: each partner appoints a scientific representative who is the chief contact for the coordinator and is responsible for production of the partner's deliverables.

Public private 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 § 6.6 of this document).

5.11. DEFINITIONS CONCERNING THE STRUCTURES

Research organisation: "an entity, such as a university or research institute, irrespective of its legal status (organized under public or private law) or way of financing, whose primary goal is to conduct fundamental research, industrial research or experimental development and to disseminate their results by way of teaching, publication or technology transfer; all profits are reinvested in these activities, the dissemination of their results or teaching; undertakings that can exert influence upon such an entity in the quality of for example, shareholders or

members, shall enjoy no preferential access to the research capacities of such an entity or to the research results generated by it[13] .
Technical centres, save duly justified exceptions, are considered to be research organisations.

Enterprise: An enterprise is considered to be any entity engaged in an economic activity, irrespective of its legal form. This includes, in particular, self-employed persons and family businesses engaged in craft or other activities, and partnerships or associations regularly engaged in an economic activity[14].

Small and medium-sized enterprise (SME): an enterprise that meets the European Commission's definition of an SME[14]. More particularly, an SME is an independent company which employs fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.

Microenterprise: Within the SME category, a Microenterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

Competitiveness cluster: A competitiveness cluster is an association of enterprises, research centres and training organisations, situated in a given geographical area and deploying a common development strategy with the aim of creating synergies around innovative projects conducted jointly and targeting one market or more[15].

5.12. OTHER DEFINITIONS

Incentive effect: Having an incentive effect means, under the terms of the community provisions, that the aid induces the aid recipient to increase its R&D activities, by increasing their size, scope, amount spent or speed. The incentive effect shall be analysed by comparing a situation without aid a situation with aid being granted, using the answers to a questionnaire sent to the company. Various criteria may be used for this purpose: total project costs, R&D personnel assigned to the project, scope of project, level of risk, increase in the risk of the work, increase in the company's R&D expenditure, etc.

Working time of researchers employed by a university: the percentage of working time of researchers employed by a university is based on the research time (considered at 100%). Thus a researcher employed by a university who devotes his/her entire research time to a

[13] See Community framework for State aids for research, development and innovation, JOUE 30/12/2006 C323/9-11 (http://www.agence-nationale-recherche.fr/documents/uploaded/2007/encadrement.pdf)
[14] See Recommendation of the European Commission of 6 May 2003 concerning the definition of small and medium-sized enterprises, JOUE 20/5/2003 L 124/39.
[15] See http://competitivite.gouv.fr/

project for one year will be considered to represent 12 person months. For the calculation of the full cost, however, the person's salary shall be counted at 50%.