



Deadline for submission of pre-proposals:	2 May 2018
Notification of selection for final proposal:	31 May 2018
Deadline for submission of complete proposals:	29 June 2018
Selection of projects by the Scientific Committee:	5 September 2018

CESAB (the Centre for the Synthesis and Analysis of Biodiversity) was created in 2010 by the Foundation for Research on Biodiversity (FRB) to promote high-level research activities devoted to the synthesis of ideas and data analysis in the field of biodiversity. CESAB offers a place and time to allow experts of all nationalities, under the guidance of a researcher from a French research institution, to collaborate and capitalize on existing data to answer a major scientific question. CESAB does not support the collection of new observational or experimental data. CESAB supports groups of international experts who synthesize ideas, concepts and data with a view to significantly advancing the knowledge front on key questions at all spatial and temporal scales in the world in the general thematic field of biodiversity. CESAB group members share their expertise and available data to answer these questions.

FUNDING FOR FOUR PROJECTS IS AVAILABLE, INCLUDING ONE ON CORAL REEFS

The FRB calls on the French research community to submit research projects in the field of biodiversity based on the analysis and synthesis of data. Projects will be considered that will address various matters including: questions related to the governance of biodiversity conservation and management, values of biodiversity and ecosystem services, identification of components of biodiversity, the state and dynamics of biodiversity, the effect of changes in land use and habitat modification on biodiversity, the functioning of ecosystems and their relationship to ecosystem services, the role of diversity (taxonomic, phylogenetic, functional) in ecosystem function, evolutionary processes related to biodiversity dynamics, adaptive responses and processes of biodiversity components, biological resources and their access, the development of standards and the interoperability of biodiversity data. Projects from the humanities and social sciences or integrating researchers in the humanities and social sciences are also welcome.

As 2018 is the international year for coral reefs, the FRB, in partnership with AFB and the Ministry of Ecological and Solidarity Transition, will finance a project on this theme. Projects will be considered to better take into account the ecological trajectories and functionalities of these ecosystems for the definition of ecological status indicators. Further information on the type of expected indicators is provided in the annex.

COMPOSITION OF THE WORKING GROUP

Multidisciplinary groups or groups including stakeholders (community stakeholders, including industry) are welcome, but this is not a selection criterion. The project coordinator will be a recognized scientist attached to a French research organization. The working groups must be largely international. If this is not the case, this must be fully justified in the proposal. The members of the group will promote the scientific and personal interactions within the working group. A post-doctoral student will be recruited for the needs of the project. Selection will be by merit by the project coordinator, the working group, the financial partner, if any, and the CESAB management. This function comprises significant scientific activity and involvement in the operation of the project. Each postdoctoral fellow needs to act as a catalyst for his / her working group, under the supervision of the coordinator.

SELECTION CRITERIA

The selection criteria include: (i) the scientific excellence and innovative nature of the project, (ii) relevance to CESAB's objectives, (iii) the quality of the working group (ie that is, the relevance of the competencies gathered and the level of expertise in relation to the topic being addressed), (iv) the feasibility of the work program (including the budget), (v) the importance of the proposed activities for the dissemination of the knowledge and data; and (vi) links to national (and international) initiatives.

DATA MANAGEMENT POLICY

Aggregated data produced by projects funded under this call will need to be made public and accessible to the broadest scientific community. To achieve this objective, CESAB asks that:

- the data aggregated during the research at CESAB are described in a relevant way (using as much as possible international standards) and are made public within a reasonable time,
- the data used to generate the derived scientific products are well documented,
- a set of publishable metadata is produced at the end of the project,



- the intellectual property rights of all data owners are respected when their data are used in CESAB working groups,
- Creative Commons BY 4 standards are applied as much as possible for all data deposited.

The FRB cannot be held responsible for any misuse of the research data thus deposited. CESAB offers a unique opportunity for scientists to use its expertise and advice, and provides links to organizations to facilitate the submission of data.

PROJECT OUTPUTS

The main objective of CESAB is to facilitate the production of new knowledge from existing data. The working groups will provide short reports at the end of each meeting, an interim report (18 months) and a final report. The interim report in particular will mention any difficulties encountered and suggestions for CESAB. These reports can be used to provide information to the public after consultation with the working group involved. Other expected deliverables are: scientific publications and all other forms of knowledge dissemination: open access modeling platforms, software, websites, databases, organization of an international workshop, training sessions, participation in conferences, presentations at major conferences or official events.

MANAGEMENT DETAILS

The financial support of the FRB or its partners in the project includes the payment of transport, accommodation and daily expenses. Participants' fees are supported as listed in the approved budget. It should be noted that the maximum eligible budget of €190,000 per project includes part of the total cost borne by CESAB, including the provision of CESAB premises and the technical support provided.

When a project is selected, a global budget is allocated to the project. Holders must respect the limits of this budget, but will have some flexibility to use it within these limits. Budget envelopes will have to be spent within the time specified in the project. Significant deviations must be approved by FRB management before execution. The arrangement of the project constitutes a commitment by the bearer: any modification of the list of the members of the group, the number of meetings etc. must be approved by CESAB management

PROPOSED BUDGET

The projects will be funded up to € 190,000 per project, including €170,000 for the operation of the project and €20,000 for the animation of the project.

DETAILED DESCRIPTION OF ACTIVITIES FUNDED.

The following will be funded:

- 5 to 6 meetings of groups of up to 14 experts. Each working group will meet at CESAB twice a year for periods of 5 to 8 days, for a maximum project duration of 3 years.
- IT and technical support for the group of experts and local logistics (planning of meetings, transport, accommodation and catering). The working groups will specify their specific IT and technical needs and designate a member with the appropriate expertise to serve as a link to CESAB's technical staff.
- One (1) post-doctoral student.

CONTACT INFORMATION

For more information on the call, the preparation of the proposal, the FRB, or the organization of the Center, please contact the CESAB team: cesab@fondationbiodiversite.fr and consult the websites www.frb.fr and www.cesab.org.

SPECIFIC INDICATIONS FOR THE CESAB THEMATIC CALL ON "EVALUATION OF THE ECOLOGICAL STATUS OF CORAL REEFS: WHAT INDICATORS WILL MEET THE DIFFERENT EXISTING PUBLIC POLICIES?"

Background – issues :

With nearly 60,000 km² of coral reefs and lagoons in its overseas territories, or 10% of their surface area on a global scale, France is the 4th largest coral country in the world and thus bears great responsibility in protecting and protecting sustainable management of these particular ecosystems. Various public policies contributing to this goal already exist at the national level, each working in a field and according to a conceptual framework of its own. Although aiming for different objectives, each of these policies requires the construction of indicators to assess the state of coral reefs and thus to report on the effectiveness of the protection measures implemented by these different policies.

Article 113 of the Nature and Landscape Biodiversity Recovery Act of August 2016 aims to go beyond this sectoral approach by setting the State's objective of developing an action plan to protect 75% of coral reefs under French sovereignty by 2021. This action plan should be developed on the basis of a review of the state of health of coral ecosystems. **This objective is an opportunity to question the relevance, robustness and adequacy of indicators to assess the state of coral reefs.**

In particular, the following indicators are considered necessary for the following frameworks, without this list being exhaustive:

- The national transcript of the Water Framework Directive (WFD, Water and Aquatic Environments Act - LEMA 2006) which aims to maintain "very good" or "good ecological status" and " good "chemical status of water in continental and littoral aquatic environments, or reclaim it if it is less good than "good ". The assessment of ecological status is based on bioindication methods in which reef benthos is considered as a quality element to be taken into account. The conceptual framework of the WFD requires constructed indicators to provide an indication of the level of environmental degradation relative to a baseline (observed or modeled, but free of anthropogenic pressures).
- the French Initiative for Coral Reefs (IFRECOR) is a national version of the International Coral Reef Initiative (ICRI), whose objective is the protection and sustainable management of coral reefs and associated ecosystems. Since its creation in 1999, a vast network of coral reef monitoring has been developed in the overseas territories, enabling the collection of data needed to assess the state of ecosystems at the national level. The Biodiversity law now sets a frequency of 5 years for IFRECOR to produce these assessments. This network is more broadly part of the Global Coral Reef Monitoring Network (GCRMN) which produces recommendations for harmonizing regional protocols and assessments produced under ICRI. Indicators required to characterize the ecological status and trends of reef biodiversity.
- Marine Protected Areas (MPA) are one of the tools for preserving coral reefs (MPA, law 14 April 2006). MPAs aim to protect marine areas with remarkable biodiversity with strong conservation, while ensuring the sustainable development of marine activities. The management of the different marine areas overseas all have three objectives: knowledge of the marine environment, its protection, and sustainable development activities. This involves marine monitoring and the need for appropriate indicators to assess the effectiveness of the management of these protected areas, for, if necessary, adapt existing measures.

The development of indicators to assess the state of coral reefs and contribute to the implementation of these different policies raises many questions. In the case of ecosystems as complex and highly subject to the effects of climate change as coral reefs, the community of actors in charge of the operational implementation of the monitoring, evaluation and restoration of these ecosystems, is confronted with practical and scientific questions without a simple solution.

Indeed, historical contingencies (old and irreversible impacts to human impact) and large-scale or particularly violent hydro-phenomena (such as ENSO or cyclones) causing ecological trajectories and status change (shift-stage) systems, are poorly accounted for in the current approaches to constructing indicators. Beyond the difficulty of taking into account ecological change in evaluating ecological state, the relevance of indicators based primarily on the abundance and taxonomic diversity of some categories of living things to account for the effectiveness of management measures aimed at restoring the functional capacities of ecosystems and the services that societies derive from them is to be questioned. While some indicators are



now in use for management, they do not allow the diagnosis of the types of pressures that affect them. In addition, none of these indicators have been published in peer-reviewed scientific journals.

With the current conceptual frameworks, we face the significant risk that after long and costly implementation of actions as a result of acquisition of knowledge and development of evaluation tools of ecological state, we will reach an unfeasible conclusion. If the assessment and monitoring of ecological status cannot, by definition, ignore biodiversity and knowledge acquisition, the overall approach to implementation and the revision of national and international policies need to be evaluated and discussed on the basis of as robust scientific argument as possible. The data mobilized for the construction of these indicators will have to be appraised to highlight the limits imposed by these data sets and the way to remedy them by **defining the necessary levels of knowledge and new data to be mobilized.**

Expected results

The submitted project must in particular make it possible:

- through interrogating existing conceptual frameworks—including through foreign experiences—and, as appropriate, by avoiding them, to define different concepts and scenarios to be used to more effectively describe and evaluate the ecological status of coral ecosystems from existing monitoring data; and if necessary propose an adaptation of such monitoring, or new data collection to better address the evaluation issues;
- define the most relevant indicators or tools to respond to each identified public policy, after setting out a framework of objectives, issues and evaluation needs for each one;
- analyse the relevance of the WFD conceptual framework and discuss the developments needed to enable bio-indication based on the best available scientific knowledge and data, including where appropriate recommendations for research and for guidance of management policies. By relying on the global treatment of the most comprehensive data possible, propose one or more alternative strategies for the implementation of the WFD.

In addition to the usual expected results, as described in the AAP (scientific publications, databases, tools, etc.), at the end of the project, a feedback / perspectives seminar open to managers and all the interested scientific community will be organized and valued. This will benefit from special support from institutional technical and financial partners (AFB, FRB, MTES).