

3rd call for proposals (2013)



Modeling and Scenarios of Biodiversity

Scenarios of biodiversity in Sub-Saharan Africa

Plausible futures of biodiversity and associated ecosystem services, to explore policy and management relevant options for their conservation and sustainable use

The FRB and the FFEM have joined efforts to organize and fund a call for research projects in Sub-Saharan Africa.

1. Aims of the call

The aim of this call is to identify and support projects that have the potential to contribute to the conservation and sustainable use of biodiversity, by increasing the understanding of future plausible changes of biodiversity and ecosystem services and by strongly linking research to policy and management in Sub-Saharan Africa.

The specific objectives are:

- 1) To generate excellent scientific research at the interface of the human and natural systems targeting the future plausible trajectories of biodiversity
- 2) To build, reinforce and extend North-South and South-South partnerships to create networks of innovation in science, policy and practice in the development and use of biodiversity scenarios

2. Background and challenges

As such, scenarios¹ of the future of biodiversity and of the availability of and access to biological resources and ecosystem services are of increasing importance in decision making. This is particularly true because the future of biodiversity strongly depends on decisions made today and, therefore, on the capacity of societies to anticipate the consequences of those decisions on time scales ranging from several years to many decades. These decisions depend on evaluations of tradeoffs that are seen differently by different actors. Scenarios, both quantitative and qualitative, can play a key role in evaluating the impacts of policy and management decisions on biodiversity and associated ecosystem services, and the impacts of biodiversity-related governance mechanisms on socio-economic activities. They also provide a strong foundation for dialog between actors - science/society/policy - and for proactive decision-making.

The development of scientifically sound, policy and management-relevant scenarios is crucial, but extremely difficult. It is thus a major challenge for the scientific community. This issue is particularly relevant at the international level, within the context of the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES) recently approved by the UN General Assembly. The aim of IPBES is to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development (UNEP/IPBES/3/L.2/Rev.1).

1. Usage of the words «scenarios», «projections» and «forecasts» differs widely among authors, but typically «scenarios» are considered to have low predictive value and should be interpreted as providing insights into plausible futures, while «forecasts» have the highest predictive value and indicate probable futures (e.g., weather forecasts). «Projections» are usually considered to have an intermediate degree of predictive value.

Estimates of plausible future trajectories of biodiversity, which we broadly refer to as biodiversity scenarios, are typically based on the coupling of :

- i) socio-economic scenarios of possible human development pathways,
- ii) projections of the effects of these development pathways on the key pressures on biodiversity, and
- iii) projections of the impacts of these pressures on biodiversity and associated ecosystem services.

Socio-economic scenarios used in biodiversity studies at global and sub-global scales are often based on plausible «story-lines» (e.g., MA²socio-economic scenarios), but a variety of other quantitative and qualitative models are often used at smaller spatial scales. Projections of pressures and biodiversity responses are often, but not always, based on quantitative mathematical models.

Several important shortcomings have been identified in current approaches to developing biodiversity scenarios:

- i) commonly used socio-economic scenarios focus heavily on energy use development pathways, minimize biodiversity considerations and do not explore a sufficiently broad range of plausible futures (e.g., IPCC SRES³ and MA scenarios),
- ii) most approaches do not account for feedbacks within the human-environment system,
- iii) projections of impacts on biodiversity are too infrequently coupled with the associated effects on ecosystem services,
- iv) too little attention is paid to estimates of uncertainty using either model-model comparisons or model-data comparisons,
- v) the relevance of biodiversity scenarios for policy and practice is often too low, and
- vi) there is often a mismatch between model outputs and key biodiversity indicators used in decision making⁴.

Through this call for proposals, the research community is invited to address these and other critical shortcomings in current biodiversity scenarios.

This call for research proposals is part of a broader strategy of the FRB to promote the development of models and scenarios of biodiversity and ecosystem services. It is the third call launched within the framework of the FRB's "Modelling and scenarios of biodiversity" programme. In partnership with the French Global Environmental Fund, it has been decided to focus this call on Sub-Saharan Africa, in order to address a major gap in that region and to develop knowledge and tools urgently needed in order to help different stakeholders there to protect and sustainably manage biodiversity. Different initiatives exist in the French as well as African research communities to develop and use biodiversity scenarios, but there remains a strong need to strengthen existing initiatives, promote the emergence of new projects, network existing efforts, maximize the synergies between groups, and enhance the interactions between scientists and stakeholders (enterprises, civil society organizations, natural resources managers, decision makers, etc.)

3. Scope

The call is open to proposals for scientific research projects within the following scope and themes:

Geographical scope

Projects must target Sub-Saharan African countries.

See the section on eligibility of projects and partners below for a list of countries whose academic and non-academic organisations are eligible for funding.

2. Millennium ecosystem assessment

3. Special Report on Emission Scenarios of the Intergovernmental Panel on Climate Change

4. Pereira H, Leadley PW et al. 2010 Scenarios for global biodiversity in the 21st century. *Science*. 330:1496-1501

Research theme

This call covers projects that assess plausible future changes in biodiversity. In particular, projects should analyze and compare a range of plausible futures and evaluate the dynamics of the ecological and human systems being studied over temporal horizons of one to many decades. Proposals are strongly encouraged to explicitly address issues of uncertainty that arise from differences between socio-economic scenarios, uncertainties in projections of pressures on biodiversity, underlying uncertainties in models of the impacts of global change pressures on biodiversity, etc.

This call covers all levels of biodiversity ranging from genes to ecosystems and including genetic resources, all spatial scales from local to global, and all environments including terrestrial, inland water, coastal and marine ecosystems.

Proposals should focus on the development and utilization of scenarios to analyze the relationships between drivers of change, biodiversity and ecosystem services, and to guide policy and practice. As such, projects addressing the impact of economic activities on biodiversity and ecosystem services, and/or the effect of biodiversity-related governance mechanisms on socio-economic activities are encouraged. However, proposals may include sub-projects that focus on more fundamental issues that must be resolved in order to improve scenarios. Applicants are particularly encouraged to use a range of socio-economic scenarios to explore policy- or management-relevant options for mitigation or adaptation, and to account for important socio-economic activities such as fisheries, agriculture, forestry, transport, energy, tourism, handicraft, etc. As such, the mobilization of skills from both natural and social sciences is essential, and a strong link to stakeholders, including fieldwork professionals/organizations, (eg. conservation or development NGOs, regional organizations, etc.) is expected.

4. Eligibility of projects and partners

The call is open to proposals that target the above aims, scope and themes and meet the following eligibility criteria.

- The duration of the proposed research should be 2 to 3 years, with an additional period dedicated to the transfer of knowledge and tools to end users.
- The total financial support requested for an individual project proposal should not exceed 150 000 to 200 000€. Projects on a smaller scale are also welcome. Applicants will have to guarantee a co-financing contribution of 50% of the project total cost (see guidelines for submission).
- Projects must include at least one partner belonging to a French research organization (including their representations or research centres abroad).
- Projects must include in their consortium at least one local or regional stakeholder concerned by the issue of biodiversity conservation, management or use (i.e. a non-academic partner from a Sub-Saharan African country: see list of eligible countries in table 1 and list of types of eligible non-academic organisations in table 2).

Participation of scientists belonging to African research institutions is strongly encouraged and will be positively considered in the evaluation.

Scientific responsibility for the project may be borne by a participant from the North or from the South, or can be shared. A single partner must support financial responsibility. Project coordination and management should be well explained and will be evaluated.

*Note: **Participants** in a project are individuals with the relevant expertise with regard to the objectives of the project. However, individual participants are required to obtain the support of the appropriate official within their organisation (**partner** of the project) by providing a signed letter of commitment.*

Table 1: List of Sub-Saharan African countries where projects can be carried out and from which organisations are eligible for funding

Angola, Bénin, Botswana, Burkina Faso, Burundi, Cameroun, Cap Vert, République centrafricaine, Tchad, Congo, République démocratique du Congo, Côte d'Ivoire, Djibouti, Guinée équatoriale, Érythrée, Éthiopie, Gabon, Gambie, Ghana, Guinée, Guinée-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibie, Niger, Nigeria, Rwanda, Sao Tomé-et-Principe, Sénégal, Sierra Leone, Somalie, Afrique du Sud, Soudan, Swaziland, Tanzanie, Togo, Uganda, Zambie, Zimbabwe

Project partners from other countries may participate with their own funding.

Table 2: List of types of eligible non-academic organisations

- **Government departments or agencies** (central or decentralized) responsible for environmental issues
- **Public agencies in charge of environmental** issues (protected area agency, water resource agency, international river agency, national observatory or office for the environment, etc)
- **Regional and local authorities**
- **Non governmental organizations** working in the field of biodiversity conservation and/or management
- **Foundations for biodiversity conservation**
- **International organisations** involved in biodiversity and natural resources management
- **Socio-economic players concerned by their impact on biodiversity and natural resources management, such as private companies, professional associations, trade unions in the fields of agriculture, forestry, fisheries, mining, tourism, etc.**
- **Local communities** (formal or informal groups) that have developed an interest for the sustainable management of natural resources

For eligible activities and spending items, please refer to the guidelines for submission.

5.5. Procedures and evaluation criteria

Evaluation procedure

Each proposal will be sent to several (three) external referees, including high-level scientists in the field of biodiversity scenarios and experts familiar with the context of biodiversity policy, conservation and sustainable use in Sub-Saharan Africa. The "modelling and scenarios" programme committee will then meet to evaluate the proposals on the basis of the external reviews. The committee will select a list of excellent proposals on the basis of the criteria listed below. The selected proposals will subsequently be presented to potential financial partners, including private companies. Once the discussions and decision-making process with those partners are completed, a final decision will be reached on the list of projects to be funded.

Evaluation criteria

Each proposal will be evaluated against the following sets of criteria:

- match with the scope and theme of the call, especially with regard to the focus on scenarios of biodiversity (development and use of qualitative or quantitative methods and models to explore a range of plausible future changes in biodiversity) ;
- degree of innovation and scientific quality of the project and consortium and potential to generate new knowledge and insights to address challenges in environmental management and policy;
- capacity to stimulate interdisciplinary research within the biodiversity scenarios community (note that interdisciplinary research covers two or more research disciplines including ecology, agronomy, climate science, informatics, mathematics, economics, sociology, geography, anthropology, ethnology, law, etc.).
- potential of the project to build capacity to use scenarios and models for biodiversity management in Sub-Saharan African countries and to strengthen North-South scientific partnerships
- relevance for stakeholders (including field managers, business and/or Civil Society Organizations, regional organizations...) and/or policy makers : all projects must involve stakeholders directly in project conception and activities (i.e. stakeholders can not be involved simply as targets for knowledge transfer)
- quality of the plan to facilitate the transfer of new knowledge and tools to end users, for real use in policy and practice;
- credibility of the partnership and project management plan (ideally projects will involve partners in France, institutions in African countries and between African countries). The stakeholders in a project must be more than 'sleeping partners', in terms of the work and the budget.

Format of proposals

These should be short and in English to facilitate international evaluation, with an abstract in English AND in French. (Information concerning the application procedure will be posted on the FRB our website shortly after publication of the call.).

6. Funding

For this call, a budget of 600 000 euros has been provisionally reserved in the framework of the FRB-FGEF partnership. In addition, the FRB will seek to raise additional financial support from several of its partners, including the business sector, in order to be able to support as many projects as possible from the list of selected proposals.

7. Timeline

* Launch of the call for proposals : 5th March 2013

* Information concerning the application procedure will be posted on the FRB our website shortly after publication of the call.

* Deadline for pre-registration of proposals (compulsory): 30th of May 2013, 5 p.m (Central European Time).

Prior to the submission of a project proposal, applicants are requested to pre-register their proposal, by giving the title, keywords, and abstract of their project, as well as the composition of the consortium. These will not be evaluated, they are only meant to help the FRB staff anticipate the evaluation process. This information may evolve between pre-registration and submission of the proposal, with some restrictions with regard to the consortium, which must be nearly finalized by the time of pre-registration.

* Deadline for submission of proposals : 20th June 2013, 5 p.m.

* Information on the list of proposals selected by the programme committee : **October/November 2013**

* Announcement of funding decisions: **End 2013 – early 2014**

For more information

E-mail: pgscenario@fondationbiodiversite.fr

See also:

<http://www.fondationbiodiversite.fr/programmes-phares/modelisation-et-scenarios-de-biodiversite>