

DRAFT

European Platform for Biodiversity Research Strategy

Informal discussion paper

The future of the EPBRS

Annexes

Purpose

These are the annexes to the working document concerning EPBRS activities over the next few years.

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Annex 1. Selecting topics for meetings of the EPBRS

Criterion 1: is this topic important for science policy?

Does existing EU policy or legislation lead to a demand for further knowledge in this issue? Are the results of research on this issue likely to improve the public good? Is work on this issue likely to lead to better legislation or improve policy and decision making? Will work on the issue promise potential benefits to the environment, to society or to the economy?

Criterion 2: is this issue most relevant to European, national or local science policy?

Is this an issue that is important for many of the participating states? Is a European approach appropriate to the urgency, importance or probable cost of the issue?

Criterion 3: is this an issue for science policy by Europeans?

Is the issue unique to Europe, or is it particularly significant for Europe? Is it an issue where we can expect that European scientists and policy makers can do better than other countries? Does Europe need its own research effort on this issue to counterbalance or provide insight into results from research in other countries?

Criterion 4: is this a major issue for biodiversity?

Is the issue widespread, common, or prevalent? Is it one that both experts and lay-people agree is important? Does this issue relate to a major driver of biodiversity loss? Does the issue relate to substantial difficulties for society, perhaps involving economic or social costs? Does the issue require an early or rapid increase in scientific knowledge if we are to prevent things getting significantly worse?

Criterion 5: will this work benefit biodiversity, or increase the welfare of citizens?

Will scientific advances on this issue have interesting potential benefits, including the ability to make decisions that will better protect biodiversity? Are potential users likely to be able to capture those benefits? Would research on this topic tend to decrease the probability of extinction of species or destruction of habitat, alleviate poverty or generate income, increase the equity in distribution of benefits gained from biodiversity, or protect biodiversity for future use or enjoyment? Would it remove barriers to other research issues in this list?

Criterion 6: does this work have high scientific potential?

Is the issue unique, in the sense that work on other issues will not greatly benefit or illuminate this issue? Will work on this issue throw light on other important issues, or will advances on this issue greatly improve the usefulness of any advances in other issues? Is there good potential for scientific progress on this issue, because it is characterised by promising avenues of research, with many qualified scientists in the domain, with access to suitable technology and facilities?

Annex 2: Possible work programme of the EPBRS

A. Science issues

1. Provide scientific information for policy

- 1.1. building the **inventory** of living things
- 1.2. assessing environmental genomics and **genetic variation** in species
- 1.3. understanding habitats
- 1.4. improve the **classification of habitats** and ecosystems
- 1.5. investigating **minimum viable areas and effective networks** of habitat
- 1.6. measuring the **quality of habitats** and ecosystems for management
- 1.7. monitoring what we have
- 1.8. species and habitats in critical condition
- 1.9. assessing awareness and knowledge of the value of biodiversity

2. Quantifying loss and causes of loss

- 2.1. Identify processes leading to loss of habitat and species
- 2.2. Understand and mitigate **degradation and loss** of natural and semi-natural habitats
 - 2.2.1. Health of the ecosystems of Europe
 - 2.2.2. Restoration of habitats and species
- 2.3. Comprehending the biodiversity of managed ecosystems
- 2.4. The biology and sociology of **biological invasions**
 - 2.4.1. Understanding Biological Invasions: Building a Knowledge Base
 - 2.4.2. Management of invasive species: Assessment, prevention and control
 - 2.4.3. Policy and Communication relating to biological invasion
 - 2.4.4. Invasive aspects of Genetically Modified Organisms (GMOs)
- 2.5. Combating **habitat fragmentation** and preventing extinction of meta-populations
 - 2.5.1. Impact of habitat fragmentation and connection on species
 - 2.5.2. Fragmentation, diversity and local adaptation
 - 2.5.3. Survival in marginal habitats
 - 2.5.4. Variation in traits
 - 2.5.5. The genetics of habitat restoration
- 2.6. Finding the means to reduce **over-exploitation and promote wise use**
 - 2.6.1. Economic exploitation including poverty as a driver
 - 2.6.2. Leisure pursuits including tourism
 - 2.6.3. Infrastructure developments
 - 2.6.4. Promoting wise use
- 2.7. Combating the biological consequences of **climate change**
 - 2.7.1. Understanding species and ecosystem response to climate change
 - 2.7.2. Movement of species ranges
 - 2.7.3. Sea level changes
 - 2.7.4. Refugia
 - 2.7.5. Climate induced changes in land and water use
- 2.8. Establish methods and guidelines to assess **environmental risk**
 - 2.8.1. Assessing environmental risk from pollution
 - 2.8.2. Assessing environmental risk from biotechnology

3. Society, biodiversity and sustainable development

- 3.1. **Valuation** and perception of biodiversity
- 3.2. **Wise use** of biological resources
- 3.3. **Translating** science results **into** nature conservation **policy**
- 3.4. **Traditional knowledge**, innovations and practices

- 3.5. ***In-situ and ex-situ conservation*** in developing countries
- 3.6. The citizen, climate change and biodiversity
- 3.7. Biodiversity in the built environment

4. Biodiversity and ecosystems

- 4.1. Understanding the ecosystem approach
- 4.2. Interaction between biodiversity and ecosystem resilience
- 4.3. High-priority ecosystems
- 4.4. Biodiversity in soil

B. Science policy issues

1. Biodiversity Action Plans

- 1.1 national biodiversity action plans
- 1.2. EU biodiversity action plans

2. Capacity building

- 2.1. Data bases (inventories of Species, Habitats, organisations, initiatives)

3. EU Issues - Implementation of Directives:

- 3.1. NATURA 2000
- 3.2. Emerald Network,
- 3.3. Specially Protected Territories, for example Important Bird Areas,
- 3.4. Pan-European Ecological Network (PEEN)

4. International issues

- 3.1. CBD: COP, SBSTTA, EU CHM
 - 3.2. Millennium Ecosystem Assessment
 - 3.3. DIVERSITAS
- 5. Projects funded by the European Community (including LIFE): reports and policy relevance
 - 6. Relevant organisations:, European Science Foundation
 - 7. Research support to policy
 - 8. Science and policy in biodiversity management plans

Annex 3: National origin of participants of the successive meetings of the EPBRS¹.

	PT	FR	SE	BE	ES		PT	FR	SE	BE	ES		PT	FR	SE	BE	ES
AT	2	1	1	2	1	BU	0	0	0	0	1	Diversitas	0	0	0	1	0
BE	2	2	5	10	3	CH	0	0	0	2	1	EEA	1	1	2	1	1
DE	3	2	4	2	3	CY	0	0	0	1	0	IUCN	0	0	0	1	0
DK	0	1	2	1	2	CZ	1	0	1	1	1	Species 2k	0	0	0	0	1
ES	2	0	5	5	9	EE	0	1	1	1	0 ²	WWF	0	0	0	1	0
FI	2	1	4	3	0	HU	1	1	2	0	1		1	1	2	4	2
FR	1	4	3	2	2	LT	0	0	1	1	1						
GR	2	0	1	2	3	LU	0	0	1	1	1						
IE	1	1	6	3	2	LV	0	0	0	1	1						
IT	1	1	3	2	3	MT	0	0	0	0	1						
NL	0	0	2	4	3	PL	0	0	1	3	1						
PT	10	2	2	2	2	RO	0	0	0	1	1						
SE	3	1	4	2	3	SI	0	0	0	0	1	IL	0	0	2	0	0
UK	4	2	4	6	2	SK	0	1	2	2	2	NO	1	2	3	3	3
	33	18	46	46	38		2	3	9	14	12		1	2	5	3	3

In each case the number of participants from the host country tends to be high, since it includes in most cases the whole organising committee. These figures do not, however, include the additional participants at the meeting drawn from the national science community. Many such people attended the Portuguese, French and Belgian meetings.

The Spanish meeting was held during a weekend with an important cultural significance in Finland, which explains the absence of that delegation at the most recent meeting.

The New Accession States have been well represented in the more recent EPBRS meetings

¹ The Finnish meeting is not considered since it was at that meeting that the idea of the EPBRS was mooted.

² BioPlatform paid for partner from EE to come, but a problem with the travel agent prevented her participation.

Annex 4: Definitions of deliverables

The task that produces it

Name of the deliverable

Description of the deliverable

How we know whether the deliverable is acceptable

Identity of the person or group responsible for producing it

Significant dates in the progress towards the deliverable (milestones)

Date of quality review

Date of delivery

Annex 5: Brief outline of major relevant initiatives

1. International initiatives include:
 - a. GBA In 1993 the United Nations Environment Programme (UNEP) launched the comprehensive "Global Biodiversity Assessment" report at the 2nd Conference of the Parties (COP) to the Convention on Biological Diversity (CBD). The 1,140-page report from 1,500 experts is a scientific analysis of global biodiversity.
 - b. DIVERSITAS is one of 4 global environmental change research programmes³. Its missions are to promote integrated biodiversity science that will produce socially relevant knowledge and provide an understanding of biodiversity loss, and to draw out the implications for the policies for conservation and sustainable use of the components of biodiversity.
 - c. GTI The GBA and DIVERSITAS encouraged the COP of the CBD to recognise the importance of taxonomy and systematics to the conservation of biodiversity, and that it is not possible to meet the objectives of the CBD without taxonomy and systematics. This is especially true of the first objective (conservation) and the third (equitable sharing of benefits) and perhaps less true of the second objective (sustainable use). In consequence it established the Global Taxonomy Initiative⁴.
 - d. GBIF The Global Biodiversity Information Facility emerged from the work of the OECD Mega science Forum Working Group⁵ on Biological Informatics, established in January 1996. The OECD Ministerial conference in June 1999 endorsed the working group's view that biodiversity and ecosystems information is often difficult to access and therefore not very useful. An international mechanism, GBIF, was needed to make biodiversity information accessible worldwide⁶.
2. There are many relevant international, national or sub-national programmes, but very few of them consider science policy, except in as much as it touches on taxonomy. Among them⁷ are, for example:
 - a. CONABIO (Mexico) the National Commission for the Knowledge and Use of Biodiversity, created in 1992, must promote and coordinate the various efforts in Mexico to know more about the country's biodiversity and its sustainable use, and to make that knowledge more widely available.

³ The others are the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme on Global Environmental Change (IHDP), and the World Climate Research Programme (WCRP). DIVERSITAS is sponsored by the International Council for Science (ICSU), SCOPE (Scientific Committee on Problems of the Environment), IUBS (International Union of Biological Sciences), IUMS (International Union of Microbiological Societies) and UNESCO-MAB (Man and the Biosphere).

⁴ The Conference of the Parties established a Global Taxonomy Initiative coordination mechanism in its Decision V/9. Its aims are to (1) assess national taxonomic capacity to identify and quantify taxonomic impediments and needs; (2) identify taxonomic tools, facilities and services required; (3) identify mechanisms to establish, support and maintain them; (4) establish or consolidate taxonomic reference centres; (5) build taxonomic capacity.

⁵ Members: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Israel, Italy, Japan, Korea, Mexico, Netherlands, Norway, Poland, Portugal, Russia, Sweden, UK, US, and the EC.

⁶ It is comprised of 3 priority programmes: (1) data access and database interoperability; (2) electronic catalogue of names of known organisms; (3) digitization of natural history collection data and four work programmes with lower priorities: (4) species bank; (5) digital biodiversity literature resources; (6) training; (7) outreach.

⁷ This really is a small sample. More can be found on Bioinformatics: Glossary of Organizations <http://www.ascoll.org/glossary.htm>

- b. BIOTA (Brazil) The “Virtual Institute of Biodiversity”, a research program on the conservation and sustainable use of the biodiversity of São Paulo State, started in 1999 with closely similar objectives to those of CONABIO.
- c. ABIF (Australia) The Australian Biodiversity Information Facility is an initiative of the Australian Biological Resources Study⁸. It aims to deliver information on Australia's biodiversity to users free of charge.
- d. BioNET-INTERNATIONAL Building taxonomic capacity to support sustainable agricultural development among developing countries.
- e. BIOSIS (US) foster the use of biological knowledge for the common good.
- f. ITIS (US) Integrated Taxonomic Information System to provide scientifically credible taxonomic information.
- g. NBII (US) National Biological Information Infrastructure will provide and access to biological databases and guides kept by Federal, State, and local government agencies.
- h. US-OBIS (US) United States Organization for Biodiversity Information is improving capacity to organize information derived from biological collections.

Selected URLs of projects, initiatives and societies relevant to the EPBRs

1	ABIF (Australia)	http://www.ea.gov.au/biodiversity/abrs/abif/
2	All Species Foundation	http://www.all-species.org/
3	BioAssess	http://www.nbu.ac.uk/bioassess/
4	BioCASE	http://www.biocase.org/
5	BioCISE	http://www.bgbm.fu-berlin.de/biocise/
6	BioPlatform	http://www.bioplatform.info/
7	BioSis	http://www.biosis.org/about/index.html
8	BIOTA (Brazil)	http://www.biotasp.org.br/
9	Catalogue of Life	http://www.biodiversity.reading.ac.uk/Catalogue-of-Life/
10	CBD	http://www.biodiv.org/
11	CDEFD	http://www.bgbm.fu-berlin.de/CDEFD/default.htm
12	CHM	http://biodiversity-chm.eea.eu.int/
13	CODATA	http://www.codata.org/
14	CoML	http://www.coreocean.org/censhome.html
15	CONABIO (Mexico)	http://www.conabio.gob.mx/conabio/conabiol.html
16	CORE	http://www.coreocean.org/
17	DIVERSITAS	http://www.icsu.org/DIVERSITAS/
18	ENBI	http://www.faunaeur.org/enbi/info.html
19	ENHSIN	http://www.nhm.ac.uk/science/rco/enhsin/index.html
20	EURO+MED Plantbase	http://www.euromed.org.uk/
21	EuroCat	<i>under negotiation</i>
22	EUROPHLUKES	http://www.europhlukes.net/
23	EVALUWET	http://www1.rhnc.ac.uk/rhier/evaluweb/index.shtml
24	Fauna Europea	http://www.faunaeur.org/
25	FishBase	http://www.fishbase.org/home.htm
26	GBIF	http://www.gbif.org/
27	GEF	http://www.undp.org/bpsp/
28	Global Biodiversity Assessment	http://dhushara.tripod.com/book/globio/ass.htm
29	GTI	http://www.biodiv.org/programmes/cross-cutting/taxonomy/gef-gti.asp
30	IMEW	http://www.dur.ac.uk/imew.ecproject/
31	ITIS	http://www.itis.usda.gov/
32	IUBS	http://www.iubs.org/
33	IUMS	http://www.iums-paris-2002.com/
35	OBIS	http://marine.rutgers.edu/OBIS/
36	Species 2000	http://www.sp2000.org/
37	SPIN	http://www.spin-project.org/
38	TDWG	http://www.tdwg.org/standrds.html
39	Tree of Life	http://tolweb.org/tree/phylogeny.html
40	VULCAN	http://www.vulcanproject.com/mainframe.htm

⁸ ABRS is a program within the Biodiversity Group of Environment Australia.

Annex 6: A mandate for the EPBRS specialised working groups

Introduction

In its meeting under the Belgian presidency the EPBRS agreed to establish specialised working groups to help accelerate and improve the quality of its work. Each group investigates a particular theme, with the following aims:

- To identify key individuals, groups, networks, resources, events, and political or science-policy processes of particular relevance to its theme;
- To review the state of scientific knowledge on the theme;
- To identify strategically significant gaps in our understanding in the theme;
- To review and comment on SBSTTA documents on the theme;
- To outline the elements of a work plan to reduce or eliminate those gaps.

Themes

The criteria initially used to identify themes that are addressed by specialised working groups are:

- The issue is on the agenda of upcoming meetings of the CBD's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and is of interest to Europe;
- The issue is of relevance to the EU Biodiversity Strategy, or to the Birds or Habitats directives, or other relevant EU policy or legislation;
- The issue is otherwise of particular importance for European biodiversity or society.

These criteria suggest that specialised working groups could include:

	Criterion		
	a	b	c
1 Biodiversity of built environments			x
2 Biodiversity of coasts, seas, and oceans (SBSTTA 8)	8		
3 Biodiversity of deep benthos			x
4 Biodiversity of dry and sub-humid lands (SBSTTA 8)	8		
5 Biodiversity of inland water ecosystems (SBSTTA 8)	8	x	
6 Biodiversity of mountain ecosystems (SBSTTA 8)	8		
7 Biodiversity of protected areas (SBSTTA 9)	9		
8 Biodiversity and climate change			x
9 Ecosystem approach (SBSTTA 9)	9		
10 Environmental risk assessment		x	
11 Genetically modified organisms		x	
12 Invasive species	x	x	
13 Monitoring and indicators (SBSTTA 9)	9	x	
14 Scientific assessments (SBSTTA 8)	8	x	

There are many crosscutting issues that would require the participation of social scientists or economists. Working groups on these issues would normally contribute to each of the natural science groups. Relevant topics include:

	Criterion		
	a	b	c
15 Scientific aspects of transfer of technology and co-operation (SBSTTA 9)	9	x	
16 access and benefit sharing	x	x	
17 capacity building	x		
18 conflict resolution			x
19 incentive measures	x	x	
20 institutional behaviour; institutional failure		x	
21 sustainable use (SBSTTA 9)	9	x	
22 traditional knowledge	x		
23 valuation of biodiversity			x

Membership

Members are selected by the co-ordinator of the group, who is normally be a participant in the EPBRS. Members need not be researchers, and the co-ordinator might ask policy-makers or other stakeholders to participate. The co-ordinator should take care to ensure that the group has a good balance – of expertise in the theme, geo-political representation, and gender. Where different schools of thought exist in the topic, it is important to try to include representatives of each in the group. The makeup of the group should be such as to allow it to incorporate most of the views likely to be expressed by the EPBRS, so that the platform would find it easy to adopt its recommendations.

Each specialised working group normally contains sufficient members to provide a range of views and a good network of external contacts, while remaining small enough to act as an effective drafting team. In most cases about 5 members would probably be appropriate.

Participation in a group should not add in any significant way to the participant's workload. This normally means that the professional task of a member is so closely aligned with the theme of the specialised working group to the extent that the work on the deliverables of the group helps them in their own tasks.

Links with other organisations

Where possible, the working groups link with and draw on the work of similar groups established by other organisations. The group should use the CHM and other facilities at its disposal to identify other expert groups with which its theme or mandate overlaps. If there is considerable overlap, the group might ask the existing expert group to contribute papers to EPBRS. The aim is to collaborate in a joint enterprise, and not to repeat work un-necessarily.

Modus operandi

Each working group is free to organise itself as it sees fit to achieve the main aim of the group – to produce a report for discussion by the EPBRS.

The steps involved in this will probably include:

1. Drafting a report based on the expertise of the members of the group and their contacts;
2. Sending the draft to EPBRS participants with the request that they circulate it among appropriate national organisations for comment;
3. Editing the draft according to the comments received;
4. Circulation to a wider audience (such as the EUBiodiversityScience electronic group) asking for comment;
5. Further editing;
6. Tabling the report 2 or 3 weeks before the meeting of the EPBRS at which the issue will be discussed;
7. Oral presentation of the report at the EPBRS meeting;
8. Preparation of a scientific review paper if the group feels it would be advantageous to do so.

To carry out its work the group does not necessarily meet physically, and most of the exchange will probably take place by email. The Research DG might convene a meeting in Brussels of up to 5 people if the group feels that this would be productive.

Deliverables

The report to the EPBRS should be a document of about 3 to 5 A4 pages with a standard format. The sections include:

1. Background generalities and constraints

2. Key individuals, groups, networks, resources, events, and political or science-policy processes
3. The state of scientific knowledge
4. Strategically significant gaps
5. Elements of a work plan to reduce or eliminate strategic scientific gaps.
6. (If a SBSTTA document has been proposed on the theme) comments on the SBSTTA document(s)

Sections 3, 4 and 5 would normally consist of short numbered declarative sentences.

The working group might also feel it would be useful to provide the EPBRS with a second, more extensive document that elaborates on this short report, and particularly on section 5.

Bearing in mind that the EPBRS intends to help in the preparation of SBSTTA meetings, if a SBSTTA document has been made available on the topic, then an elaboration of section 6 would probably be useful.

The working group might also decide to use this work to prepare a scientific paper for publication.

Schedule

The schedule for the delivery of the report will be set by the EPBRS. This would normally be 2 or 3 weeks before the meeting of the EPBRS at which the issue will be discussed.

SBSTTA secretariat documents are often made available rather late in the day, so the schedule for this work may be tight and the work should if possible be planned in advance.

Termination

The EPBRS will determine when the group has accomplished its task and can be dissolved.

Specialised working groups normally have a lifetime limited by the delivery of the main product. In some cases, however, the EPBRS might agree that the group should continue to develop the theme by logical stages, out of which two or more successive reports might come.

Finance

The EPBRS has no funds to support the specialised working groups. For this reason participation is on an “own resources” basis.

Annex 7: Drafting Teams

1. Context, Vision, Mission and Membership

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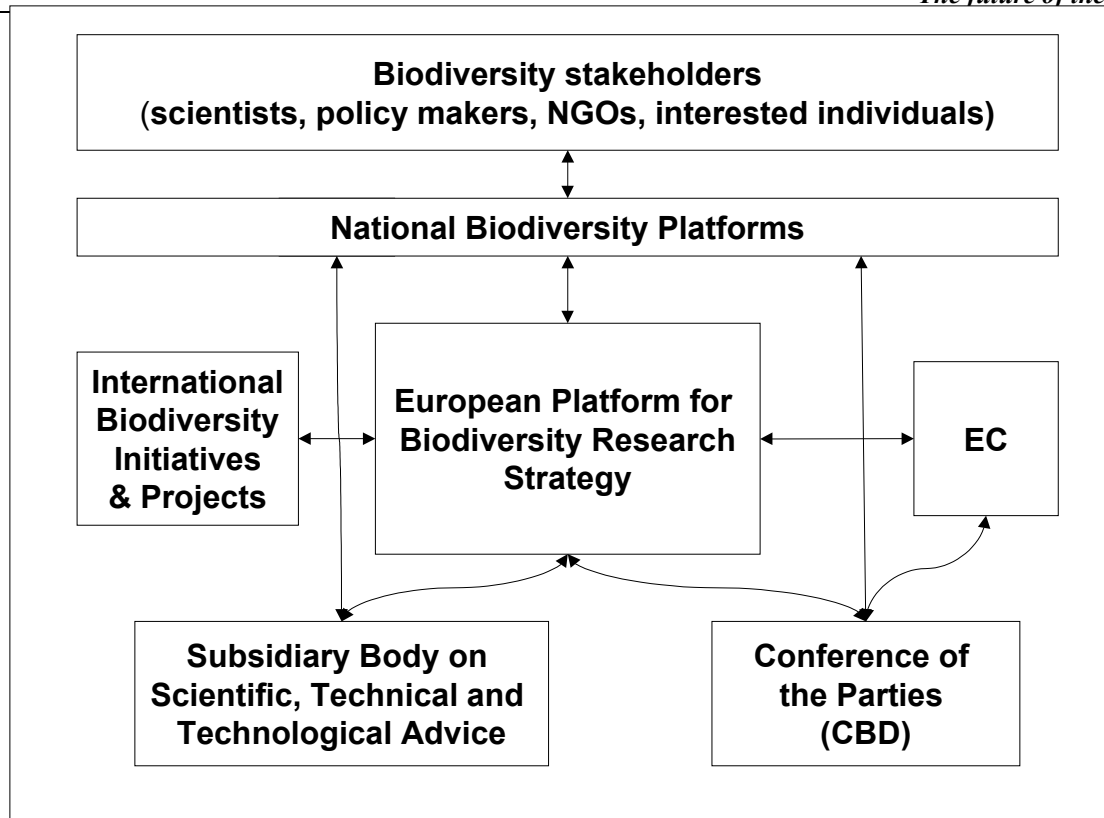


Fig. 1. Diagrammatic representation of structures for representation of individuals within the CBD.

MJS: While something like this diagram could be useful, as it stands it needs work. I would remove the EC since (a) there is no national counterpart, and (b) the inclusion of the EC means that additional arrows would have to go at least to the projects and to SBSTTA. Secondly, I would want to know exactly what flows along each arrow, and to what extent each flow is truly bi-directional.