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Presentation of the Data4Nature initiative

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The bar chart features six vertical bars of varying heights. Each bar is filled with a different, vibrant illustration of a jungle scene. From left to right: the first bar shows a red bird; the second bar shows a jaguar's head; the third bar shows a blue butterfly; the fourth bar shows a pink flower; the fifth bar shows a green frog; and the sixth bar shows a red bird. The background of the bars is a mix of green and blue tones, suggesting foliage and sky. To the right of the bars, the text 'AN INITIATIVE TO ENCOURAGE THE SHARING OF BIODIVERSITY DATA GENERATED BY DEVELOPMENT PROJECTS, VIA GBIF.' is written in a green, all-caps, sans-serif font.

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## The core of the matter

Through the projects and studies they finance, public development banks assist their clients in producing flora and fauna observation data, which represents a valuable asset in maintaining biodiversity in developing countries. Whereas the dissemination of some studies may be restricted or even confidential, the data on which they are based do not carry the same weight. Since data are not published, they are currently largely underexploited. By using very few resources, public development banks and their clients can easily make the collected data accessible to scientists and other users (policy makers, environmental agencies, consultants, etc.) and thus contribute not only to the fight against the erosion of biodiversity, but also to sustainable development in sectors such as food security, climate change and human health. Development banks can better assess how efficient the mobilization of resources is for the post-2020 agreement of the Convention on Biological Biodiversity.

## The development banks and their clients produce a wide range of biodiversity data

As part of the studies and projects they finance, development banks assist their clients in producing a significant number of important raw biodiversity data. These data are generally collected in the field by specialized consulting firms, as part of environmental impact studies and any potential following environmental monitoring studies. As shown in the diagram below, their consulting firms are directly commissioned by the contractor, whose project is financed by one or more funders.



Figure 1: Production of raw biodiversity data in projects financed by public development banks

### What do we mean by “raw biodiversity data”?

Raw biodiversity data refers to the observation of fauna or flora situated in time and space. This type of data, also known as taxon occurrence data, provides evidence that a species (or some other taxon) is present in a particular location on a given date.

Raw biodiversity data generally arise from field naturalists’ inventories. As such, this data may be collected in different ways. Most often, they result from visual observations or auditory contact. However, they may also be obtained through recordings (camera traps in the case of large fauna or ultrasound detectors in the case of bats, for example), or from sample collections (environmental DNA in the case of aquatic fauna, for example).

Every environmental impact study results in the compilation of an average of 500 to 1,000 items of raw biodiversity data<sup>1</sup>. Given this estimate and the number of environmental impact studies financed, the French Development Agency (AFD) is likely to contribute to the production of an average of 30,000 items of raw biodiversity data per year. If this figure is then extrapolated to the major multilateral development banks, in proportion to their financial commitments, almost 300,000 items of raw biodiversity data are likely to be produced annually.<sup>2</sup>

## Encouraging open access to data is key to biodiversity conservation

### Wildlife is under serious threat

In its 2019 report on the state of biodiversity, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reports an “unprecedented” and accelerating species extinction rate. It indicates that the current global response is inadequate, and that “transformative changes” are needed to restore and protect nature. This press release also highlights that 1,000,000 species are threatened with extinction, out of the 8,000,000 globally known species.

To tackle biodiversity erosion, significant knowledge of the distribution and health status of animal and plant species is indispensable. More open-access raw biodiversity data reduce costs and improve the quality of studies. In particular, they facilitate the definition and assessment of any undertaken actions to preserve biodiversity. For example, raw biodiversity data are used to compile red lists of endangered species or to calibrate indicators of a company’s or financial institution’s environmental footprint, or to assess the efficiency of public policies.



Figure 2: An unpublished observation of the Cameroon Grassland Frog (*Ptychadena retropunctata*) made in June 2018 near Labé in the Fouta Djallon Mountains of Guinea (Photo credit: Jean Cassaigne – Biotope)

**While the financing needs to implement the ecological transitions needed by 2030 are estimated to be between 300-600 billion dollars per year, development banks have an opportunity to facilitate the assessment of the mobilized resources efficiency by promoting data sharing.**

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In this context, the large number of raw biodiversity data acquired through development bank funding become more and more valuable, and their publication may help conserve biodiversity.

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Up to now, these data are generally only used in the study for which they were collected. Beyond this, they fail to contribute to increasing biodiversity knowledge, as they are neither published, nor accessible, nor reusable for future studies.

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<sup>1</sup> Estimate supplied by Biotope based on their experience (<https://www.biotope.fr/>)

<sup>2</sup> Using the figures for 2018 financial commitments, it is estimated that the amount of raw data produced per year by each funding institution is as follows: World Bank: 142,095; Asian Development Bank: 48,032; KfW: 27,895; African Development Bank: 22,946; European Investment Bank: 20,526.

### **Biodiversity awareness and knowledge sharing: a major goal of the Convention on Biodiversity**

The Convention on Biodiversity (CDB), adopted in 1992 at the Rio Earth Summit, puts knowledge and knowledge sharing on biodiversity at the heart of its measures to achieve its objectives:

- Biodiversity conservation: the designation of protected areas, conservation of species and natural habitats;
- Sustainable use of biodiversity;
- Access to genetic resources, and fair and equitable sharing of the benefits resulting from their use.

## **An opportunity to reduce the gap in biodiversity data in developing countries**

**Raw data produced as a result of development banks funding are of great interest. On the one hand, developing countries where development banks operate are home to many global biodiversity “hot spots”. On the other hand, these countries often lack biodiversity knowledge compared to wealthier countries.**

Analysis of published data on the GBIF (Global Biodiversity Information Facility) platform highlights high heterogeneity in the distribution of raw biodiversity data available worldwide. Beyond any differences that might be observed between developed and developing countries, there is a significant lack in raw biodiversity data in many African and Asian countries.

A very large part of raw biodiversity data collected and published worldwide relates to the Birds group. They account for over 91% of all occurrence data. This proportion rises to more than 98%<sup>3</sup> if we focus on developing countries.

Conversely, extrapolations made from a sample of AFD studies show that bird sightings account for barely 20% of raw biodiversity data produced through development banks funding. Surveys carried out as part of environmental impact studies relate equally to flora, insects, amphibians, reptiles, birds and even mammals.

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**Given these opposing trends, public development banks could play a key role in gaining knowledge about wild animal and plant species distribution in developing countries.**

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For instance, an analysis of AFD-funded studies shows that, in 2018, they would have led to the publication of up to 56% of amphibian observations on the GBIF platform, as well as 35% of grasshopper and cricket observations, 30% of reptile observations, and even 25% of mammal observations for all countries in which the agency operates.

A cross-analysis of AFD-funded projects and the number of country-published data by countries on the GBIF platform allowed the assessment of the relative contribution of raw biodiversity data produced by these projects. The following table outlines an estimate of this contribution relative to the region in which AFD was active over the 2015-2019 period.

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<sup>3</sup> Proportion calculated using the number of taxon occurrences made by human or machine sightings published on GBIF during the 2015-2019 period for all countries in which AFD is active.

Table 1: Assessment of AFD's relative contribution to GBIF in the event of the transmission of raw biodiversity data collected from projects funded over the 2015-2019 period.

Regions	Number of projects with impact studies	Proportion of data produced through AFD financing (%)	Proportion of data other than Bird data produced through AFD financing (%)
Southern Africa	8	0.07	2
East Africa	25	1.17	23.8
North Africa	21	5.04	157.2
Sub-Saharan Africa	74	12.15	23.4
<b>Africa Total</b>	<b>128</b>	<b>0.85</b>	<b>15.5</b>
Central America (only Mexico)	2	0.03	0.3
South America	15	0.07	1.4
Antilles	2	1.17	21.5
<b>America Total (excluding North America)</b>	<b>19</b>	<b>0.07</b>	<b>1.16</b>
Central Asia (only Uzbekistan)	1	4.87	60
East Asia (only China)	13	1.91	60.7
West Asia	19	2.26	127.9
South Asia	18	0.12	20.4
South East Asia	12	1.39	36
<b>Asia Total</b>	<b>63</b>	<b>0.37</b>	<b>39.4</b>

## Some actions already undertaken by financial institutions in relation to data publication

Private financial institutions have taken the lead in encouraging the sharing of biodiversity data acquired during impact studies through the “Equator Principles”<sup>4</sup>. Thus, since July 1<sup>st</sup>, 2020, financial institutions adhering to the “Equator Principles” are committed to encourage their clients to share raw biodiversity data acquired through funded project.

For their part, public development banks are lagging behind in mobilizing biodiversity data produced by the projects they finance. To date, very few concrete actions have been taken to pool and capitalise upon these data.

An AFD study on the integration of biodiversity data produced through development bank funding (Biotope, 2020) **shows that, with the support of the GBIF, public development banks could implement a relatively simple mechanism to encourage raw biodiversity data publication.**

## The GBIF, a global data sharing infrastructure and network

**Among the numerous existing mechanisms able to capitalise and disseminate global raw biodiversity data, the GBIF (Global Biodiversity Information Facility) holds a central position. It clearly appears to be the preferred mechanism for publishing raw biodiversity data produced through development banks funding.**

The GBIF is both an international network and research infrastructure funded by world governments. Created in 2001 by the Organisation for Economic Cooperation and Development (OECD), it aims to provide open access data on all types of life on Earth, to everyone and everywhere. This access to data is enabled through the international GBIF web platform ([www.gbif.org](http://www.gbif.org)). It offers everyone the opportunity to search, select and download published raw biodiversity data, at no charge.

The GBIF receives information from many institutions around the world (research laboratories, public organisations, nature conservation NGOs, natural spaces managers, large private enterprises, etc.). These organisations rely on the GBIF's network of national focal points, which offer local support to publish their data.

<sup>4</sup> GBIF, 2019. *The Equator Principles encourage open access to environmental impact data through the GBIF network – GBIF News - 3 December 2019 - <https://www.gbif.org/>*

The main data publishers involved in the GBIF offer access to their databases through their own servers through machine-readable Creative Commons licences. The GBIF focal points also offer data providers the option to host their data on GBIF servers. Thus, the GBIF combines multitude of databases to share and optimise content. Data publishers, however, remain owners of their data and retain control over it.

### Zoom to data collected by the GBIF

In September 2020, with nearly 1.6 billion items of observation data on over 1.5 million distinct species, GBIF is by far the mechanism that gathers the greatest number of global raw biodiversity data. This knowledge arises from multiple sources (field observations made by professional or amateur naturalists, automated recordings, museum collections, etc.).

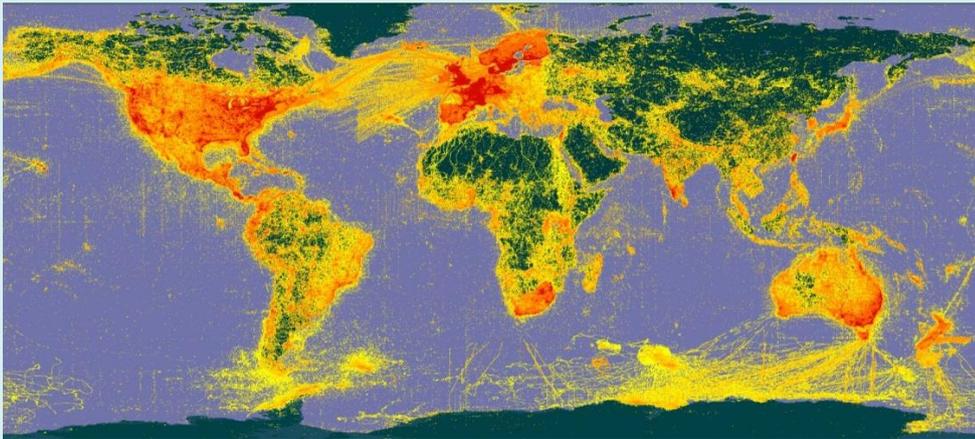


Figure 3: Distribution of taxon occurrences on the GBIF network (Source: GBIF, 2020)

## Adapting funding agreements to enjoin environmental consulting firms to publish collected data

In terms of the process for publishing data on the GBIF platform, as well as the resources and prerogatives of each stakeholder involved in the production of raw biodiversity data in studies financed by development banks, it is clear that **the consultants that collect data in the field are best placed to supply data to GBIF**. In addition, these consultants can easily rely on GBIF to host their data and provide them with technical assistance.

In order to encourage consultants to publish raw biodiversity data on the GBIF platform, which is collected as part of studies financed by a development bank, the simplest solution is to incorporate **a specific clause into the contractors' funding contracts and/or in the terms of reference** of the studies.

Once they are assigned, consultants undertake to complete all the steps required to publish their data on the GBIF platform: **this essentially involves formatting collected data so it can be published!**

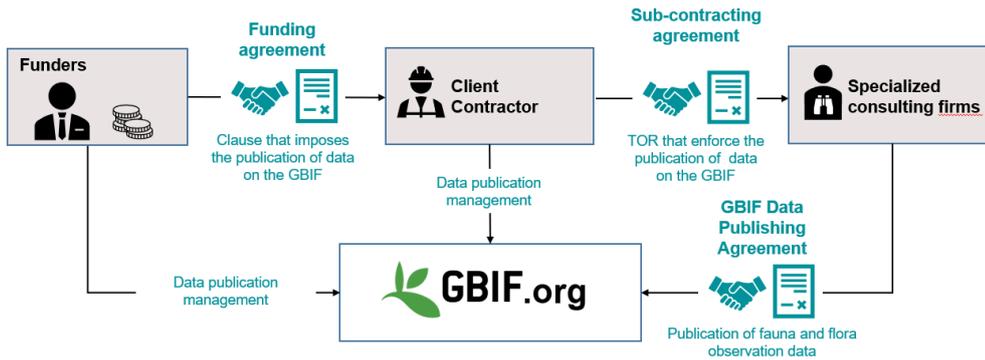


Figure 4: Suggested solution for publishing raw biodiversity data acquired as a result of financing by public development banks

## An inexpensive and easy to implement approach

### The additional work involved in publishing data mainly relates to data formatting

The amount of additional work and the extra-cost involved in data formatting and publication on the GBIF have been assessed in a study carried out by AFD. This would involve a moderate additional cost in terms of consultant services. The additional cost is estimated to be an average 3,300 euros per environmental impact study, which corresponds to less than 0.7% of the average total cost of a study.

For development banks, the tasks to be carried out are limited to the integration of a new clause in the funding agreement, monitoring the publication of raw biodiversity data, and training and raising awareness of any staff working in these areas (the GBIF offers training materials and could provide some assistance).

#### A measure without any specific legal obstacles

There are no significant legal barriers preventing the publication of raw biodiversity data. However, precautions are necessary and due diligence is required.

First, any raw biodiversity data must always be published with the consent of the data owners. In general, these owners are both the data producers (usually a consultant) and the institution that directly financed the study that made it possible to acquire data (generally the contractor). The owner's agreement can easily be secured through a clause on data publication, which can be included in the funding agreement and the study's terms of reference.

As a precaution, it should be verified that publishing data is not incompatible with the public and private laws that apply in the country in which the data is collected. This task can be delegated to the contractor and consultant in charge of data collection, again through a data publishing clause that forms part of the funding agreement and the study's terms of reference.

