

PROGRAM ASSESSMENT

FAPESP IMPACTS SERIES

BIOTA - MAIN RESULTS

Program's General Information

- Assessment period: 1998 – 2009.
- Completed in 07/2012.
- A total of 72 projects were assessed, which corresponded to a total investment of BRL 38 million.

This document is part of a set of summaries presenting the results of impact assessments performed for the FAPESP programs. The full document and assessment can be seen at <http://www.fapesp.br/avaliacao/relatorios/biota.pdf>

The Biota program was officially initiated in 1999 as a result of the articulation of the scientific community to create a research program aimed at the characterization and preservation of the biodiversity of the state of São Paulo and its sustainable use aligned with the principles of the 1992 Biological Diversity Convention. The program is inserted in FAPESP's Technological Innovation line and foresees impacts in public policies and technological innovation.

In order to analyze the impacts of this Program, a quasi-experiment was designed, comparing the results of the set of Biota projects with other biodiversity projects at Fapesp that could have belonged to Biota, but that for several reasons did not integrate the Program.

Since its conception, the Biota Program stimulates and gathers an expressive amount of Thematic Projects and, therefore, more financial and human resources. This characteristic was a challenge for the quasi-experimental analysis, since it consisted in dissociating the effects of the Thematic Projects and the effects of the Program itself in order to understand the extent to which the Biota results derived from the size of the projects or if there was an actual differential resulting from the Program. Chart 1 presents the constitution of the Program assessment sample, representing 78% of the total population.

Chart 1 - Total respondents of the Biota Program assessment by support modality and control group with the corresponding percentage in relation to the universe.

Modality	Biota (%)	Control (%)	Total (%)
Regular Support	22 (71%)	83 (80%)	105 (78%)
Young Researcher	3 (100%)	6 (86%)	9 (90%)
Thematic Project	22 (69%)	6 (100%)	28 (74%)
Total	47 (71%)	95 (81%)	142 (78%)

The concentration of Thematic Projects in its composition explained much of the superiority of the Program in most of the indexes. This characteristic created a challenge for the isolation of the effects of the Program, since the Control Group did not gather similar amount of projects of that nature and, therefore, was unbalanced. This created a risk of confusing the effects observed as Thematic effects and not from the actual Program. There was an effort to isolate the exclusive effects of the Program by means of statistic models of the Propensity Score type, which weigh the results of the comparison.

Contribution of the Biota Program for the characterization and preservation of the biodiversity in in the state of São Paulo

The Biota Program strengthens and promotes the evolution of the Taxonomy and Systematic area in general. As a clear evidence, the Program identified approximately 3 times more taxons than the Control Group (524 taxons identified/project and 164 taxons identified/project, respectively). However, regarding integrally new taxons, it is worth registering that the superiority of the Program is explained by the higher concentration of Thematic projects compared to non-Biota group.

Particularly for the Zoology area, there was a variation of biological collections favorable to the Biota Program (on average 36% percentage points more to Biota). Additionally, the Program employed more professionals in the biodiversity area (21% of that refer to biological collection curators and taxonomists against 3% in the control group).

The statistical analyses showed that the Biota Program promotes and increases scientific and collaborative production around the biodiversity theme.

The Program projects published almost twice as many papers (already deducting the bias of thematic projects). Both analyzed groups presented similar levels of influence of FAPESP's support for the publication of papers.

It is important to emphasize that the impact factor of journals is similar between the two groups (except for the presence of 13 papers in *Science*, outliers of the Biota analysis). Regarding collaboration, it could be observed that Biota involves twice as many co-authors than the projects in the Control Group. These findings are presented in Chart 2.

Indicators	Values already considering PS analysis			
	Biota Effect	p-value	CI 95%	CI 95%
articles	1.9	0	1.2	3.1
Co-authorship	2.1	0.200	0.9	2
Supervision of theses	1.2	0.400	0.7	2.2

Chart 2 – Biota effects estimated by statistical regression models, weighed by the Propensity Score.

Additionally, there is evidence of internalization of co-authorship networks, especially in the Biota Program projects, suggesting that there are two communities with different relationships delimited between each other.

On the other hand, regarding the total production of theses and dissertations, or academic production, the analysis of quasi-experiments presented no significant differences between the groups.

However, the influence of FAPESP's support in developing the dissertations and theses for the Control Group is greater than for Biota. A possible explanation is the strong relationship existing between theses and dissertations and the Regular Research Supports, the prevalent modality in the Control Group.

The Biota Program offered more training to the general public and increased the visibility of the biodiversity theme. The Biota projects reached a total of 17,132 people (average of 450 people per project) with its training activities. From these, 83% were from the General Public (including elementary and secondary schools), 8% from Higher Education Institutions and 2% from the Public Administration. In the Control Group, 1,314 people benefited from the training offered (an average of 32.8 people per project), where 57% were from Higher Education Institutions, 15% from the project team itself, and 7% from the General Public.

It is remarkable the disclosure of results from the Biota Program out of the academic environment: 66% of the Biota projects declared disclosure actions against 44% from the Control Group. It can be noted that the results of the Program were fairly adopted by the public administration in both groups (24% for the Program and 18% for the Control Group).

Bioprospection, a challenge beyond academia

Regarding sustainable use of biodiversity, strictly understood as the introduction of new substances derived from the biodiversity into the market, a low impact was observed for both control and treatment group, with the activities being concentrated in the research of potential active substances. Approximately 12% of the assessed projects held research in toxicological tests of bioactive substances. The insertion in more advanced stages of the technological development (identification of targets, production of molecules, pre-clinical or clinical research) is practically non-existent in both groups.

Conclusion

In general terms, the BIOTA assessment showed that the results and impacts of biodiversity projects held in the program presented higher indicators in several themes when compared to projects in biodiversity held in isolation. Therefore, the evidence found is favorable for the arrangement of biodiversity projects under programs in the characterization and preservation areas. Nonetheless, "sustainable use" research presented low-impact evidence in any arrangement, suggesting Biota and biodiversity projects in general miss this front probably because other capabilities than those supported by Fapesp are required to go over the domain of sustainable use.