Biodiversity Integrated Assessment and Computation Tool | B-INTACT

Mainstreaming biodiversity impacts into agricultural investments and policies

In recent decades, concerns have grown around the environmental impact of the Agriculture, Forestry and Other Land Use (AFOLU) sector, more specifically on the impact of agricultural activities on biodiversity. Since the introduction of the Aichi targets, released by the Convention on Biological Diversity (CBD) in 2010, the United Nations have been empowered with greater influence on decision-making impacting biodiversity.

The Biodiversity Integrated Assessment and Computation Tool (B-INTACT) uniquely seeks to provide a thorough biodiversity assessment of project-level activities in the AFOLU sector, taking on both a quantitative and a qualitative approach. The quantitative approach considers a set of relationships for anthropogenic impacts on biodiversity from land use changes, habitat fragmentation, infrastructure and human encroachment. Biodiversity responses are quantified in the mean species abundance (MSA) metric, which expresses the mean abundance of orginal species in disturbed conditions relative to their abundance in an undisturbed habitat (where **MSA = 1** highlights an entirely intact ecosystem and **MSA = 0** highlights a fully destroyed ecosystem). Non-quantifiable impacts to biodiversity from project activities are assessed with a qualitative appraisal.

Objectives

Quantify the biodiversity impact of various investments at project and policy-level using globally recognized environmental assessment methodologies.

Provide decision-makers with a set of policy indicators to help make informed decisions on possible biodiversity risks, biodiversity loss and management practices.
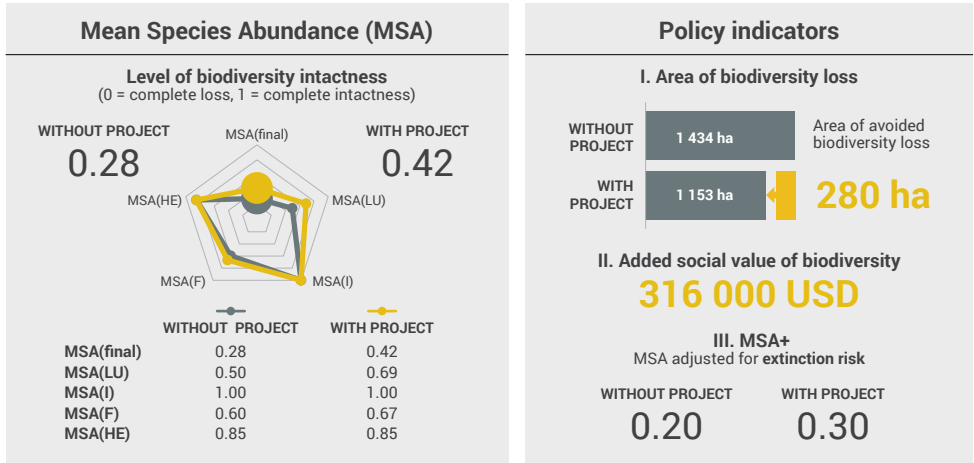
Extend the scope of environmental assessments to capture biodiversity concerns, which are not accounted for in conventional carbon pricing.
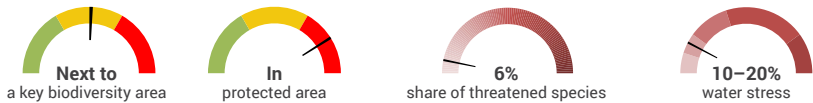
Support countries in accessing funds from international financial institutions and mechanisms to finance projects, programmes and policies.

SAMPLE OF BIODIVERSITY RESULTS

Mean Species Abundance (MSA)

Level of biodiversity intactness
(0 = complete loss, 1 = complete intactness)

WITHOUT PROJECT
0.28

MSA(final)

WITH PROJECT
0.42

MSA(HE)   MSA(LU)

MSA(F)   MSA(I)

	WITHOUT PROJECT	WITH PROJECT
MSA(final)	0.28	0.42
MSA(LU)	0.50	0.69
MSA(I)	1.00	1.00
MSA(F)	0.60	0.67
MSA(HE)	0.85	0.85

Policy indicators

I. Area of biodiversity loss

WITHOUT PROJECT	1 434 ha	Area of avoided biodiversity loss
WITH PROJECT	1 153 ha	**280 ha**

II. Added social value of biodiversity
316 000 USD

III. MSA+
MSA adjusted for **extinction risk**

WITHOUT PROJECT
0.20

WITH PROJECT
0.30

Qualitative biodiversity impact summary

Biodiversity sensitivity and impact analysis

Next to
a key biodiversity area

In
protected area

6%
share of threatened species

10−20%
water stress

Neutral	Positive	Neutral	Increase	Positive
Impact on key biodiversity area	Impact on protected area	Impact on threatened species	Risk of alien species	Impact on water use

The project has an expected positive impact on the local biodiversity

Biodiversity management activities and agrobiodiversity practices

Biodiversity management activities from the project	1 500 ha	15 000 USD
Agrobiodiversity practices from the project	100 ha	7 500 USD
Improvements on the entire project area	1 600 ha	22 500 USD

▶ B-INTACT makes use of various geo-referenced maps and tools to increase accuracy and account for the **ecological value** and **biodiversity sensitivity** of project sites.

▶ The tool provides users with a **monetary valuation** of the avoided biodiversity loss from project activities, based on estimations on the social cost of biodiversity.

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