



Q&As - Articulating biodiversity benefits from investments – introducing the Biodiversity Impact Assessment Framework (BIAF)

Please find below a compilation, separated by topics, of all questions received during both webinars on 23rd April 2024, with their respective answers.

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Use cases of BIAF

1. Is the tool free to use?
BIAF is at the moment a framework method (not a tool per se with e.g., a user interface). The method is made publicly available, yes.
2. Could we use this methodology for the assessment of biodiversity impact assessments for companies?
Yes, it is possible to use this methodology to assess the biodiversity impact of companies. You might need to adapt the framework to your specific needs.
3. Where farmers are increasing biodiversity through habitat restoration and creation of wetlands, can this be taken into account in the software? In NZ we can model nutrient losses (nitrogen & phosphorous) so we can quantify these reductions as well.
Yes, and where good local information on gains is available that can be incorporated - allowing greater certainty and precision in the scoring.



4. Can BIAF be applied to assess/project the potential wider (positive) impact of technologies that are piloted in a small geographical area but could be scaled up to a much wider area? (E.g. the algae/seaweed case study that scored lowest in the case studies, 0.15 total score, could be of wider benefit.)

Yes, it can be applied in such cases. This is illustrated with one of the case studies (the one on technology for interpreting plant biosignals). However, the results are dependent on the predicted use of the technology in the time-frame used (e.g. 5 years).

5. Would a competence increase throughout the organizations support the engagement and decision making, action taking once the assessment is conducted?

Presumably yes, the hope is that the approach will help investors to think through the potential impacts and how to maximise positive outcomes.

6. Is the framework, as of now, also applicable to management of real estate portfolios, i.e. the implementation of changes that enhance biodiversity in the urban area?

The simple answer is yes. Any intervention that's aimed at creating biodiversity benefits can be assessed with BIAF. The impact pathways in this case will be whatever you're doing that is better than business as usual to enhance biodiversity; this will give an indication of the likely benefits, including what approaches might have the highest impact. The advantage of BIAF for the assessments of real estate projects is that it does not focus only on the location, but also considers aspects such as energy efficiency, and other indirect benefits for biodiversity.

7. Can the tool also be used by companies seeking to assess the biodiversity impacts of their normal business activities (e.g. mining companies, forestry companies, food companies) or is it meant primarily for "solution-providers", i.e. companies offering alternative approaches with positive biodiversity benefits?

In principle, BIAF can be used for any kind of impact assessment, but it was mainly developed for the positive solution side of things, and assesses change from 'business as usual' rather than absolute impact (or 'footprint'). BIAF looks at where you can achieve gains, but also checks that you are not introducing new negative impacts and if you are, then making sure you can balance those against the gains. There are lots of existing footprint tools and tools for assessing negative impacts, and BIAF is not seeking to replace those. In some cases, the impact pathways found through BIAF can help to get a clearer idea of the negative impacts of a project.

8. How can we apply BIAF for protected area biodiversity impact assessment?

BIAF can be applied to assess the potential impact of different interventions (e.g. management decisions for protected areas), or the positive impact of establishing a protected area relative to other scenarios. However, other well-established frameworks exist for assessing Protected Area management effectiveness and outcomes.

9. Can it be used to assess a project which might start off as having negative biodiversity impact, but with additional positive land use be used to reach an overall positive outcome? Can it lead to effectively enhance a proposal by redesign and checking within the calculation?

Yes, in principle - so long as that information is available and fits within the defined assessment timeframe.

10. What's your advice regarding fisheries baseline ecosystem assessments and the utility of a tool like BIAF in an eg blue TNFD assessment, when the ocean is warming and the fish are on the move?

For marine systems generally, we have less information than we like to apply the scoring in BIAF. However, in one of the case studies (Company B) you'll see that we have used some assumptions about the impacts on marine ecosystems based on fisheries impacts. Those assumptions are quite specific and



may not be fully valid, but it shows the kind of thinking that's needed in order to apply BIAF and how you could document the impact of different assumptions. The mobile nature of fish is yet another, very real, complexity. But for the pre-investment stage, at least, BIAF aims to get an idea of the rough magnitude of the impacts. In the case study we basically looked at how a reduction in fisheries pressure in a defined region could improve the condition of the ocean ecosystem there.

11. You spoke about the challenge of scalability, limited by depth of expertise required and detailed in situ work. How do you propose to scale so that investors in portfolios could see a baseline across a large universe of equities?
This approach is primarily aimed at impact investors or corporates who are considering individual projects / opportunities. It is not a suitable approach to apply to a large portfolio, though it is possible to use BIAF to assess the cumulative impact of a suite of investments with the same business model, if the overall scale can be established.
12. Given that you're creating a scoring system, has this been tested to compare alternatives within an industry? So that you could compare scores of alternatives and create an "opportunity" gradient for a given context (tech, industry, etc)?
Not yet, but that sounds like a great idea - if sufficiently granular information is available to differentiate impacts.
13. Will this framework be brought to government sides, beside NGOs/private sectors?
We have not yet been in contact with government organisms, but it would be great if they would see the potential to use BIAF for their work.
14. Can you speak to the appropriateness of the BIAF/ BIM metric for quantifying the land-use footprint for a portfolio (i.e., financial institutions)?
It depends on the nature of the portfolio and the amount of data, time and knowledge you have about each individual investment. BIAF is not designed to accommodate big portfolios, as it's more based on direct interactions with companies or project managers. The Biodiversity Risk Filter, on the other hand, can accommodate large portfolios of listed equities. But if you are interested on assessing land footprint of a portfolio, mostly in terms of negative impacts, there are a number of other frameworks that would be better suited to that.
15. Is this scoring used for a multinational group running the same business model?
BIAF can be used by corporates to assess projects across different business lines. Corporates often have flexibility or alternatives in terms of where to set up a plant or where to source from, what exactly to source, how to set up operations, value chains, etc., and BIAF is suited to assess different project designs and different options through the scoring of impact pathways. BIAF will give an indication to what are the pros and cons of different alternatives.
16. Are you looking into how the impact measurement could be turned into biodiversity credits? Or how could the impact measure feed into credits?
It is possible to use BIAF for credit measurement - especially, it could be interesting for products that are not necessarily place-based e.g. technological solutions. WWF is still defining its position/requirements towards biodiversity credits.
17. Does it make sense to you to also use the BIAF for choosing and measuring the positive impacts in areas prospected for Nature Based Solutions and restoration activities?
BIAF can be applied to assess the biodiversity benefits of restoration or Nature-based Solution projects compared to relevant alternative scenarios.



18. Does the report disclose the size of the test cases? i.e. Fund managers are often looking for projects with users that are willing and have funding to take on the assessment. How would small landholders with limited access to capital implement this, and ultimately, use it as a metric for potential or further investment? At the current version, what "size" of business is BIAF targeted for?

BIAF is targeted towards the assessment of small and medium enterprises, but the information on the size of the case studies is not available in the report. Currently, each interested user of BIAF can freely apply the methodology according to his/her needs and capacities, but the aim is to develop the BIAF further into a tool that can be used in a cost-effective way.

19. What do investors get out of BIAF?

- Foundation to tell a credible story about how an investment or project will impact biodiversity
- Insights on the most important positive and negative impact pathways, which can inform biodiversity action plans
- Ability to rank investments from a biodiversity point of view
- Ability to compare expected biodiversity impacts with achieved impacts

BIAF in the biodiversity assessment landscape

20. The method seems quite similar to a tool made available by FAO, which is The Biodiversity Integrated Assessment and Computation Tool (B-INTACT). Are you familiar with it? What are the differences?

Yes, B-INTACT also uses an extent x condition framework. However, it is focused on land use (in defined locations) and doesn't easily apply to other business models. It also isn't available for commercial use.

21. Has there been any initial interest or engagement from financial market players regarding the BIAF? Similarly, any traction with the different standard setting ecosystem (SBTN, TNFD et al.)?

We have spoken to a few, mostly small private equity FIs as part of our user needs assessment. However, we have been in contact with various consultant firms for some time. We plan to include the standard setters in the next development steps. The results of an assessment with the BIAF should help to fulfil their requirements.

22. I guess the calculations are not necessarily comparable between projects/locations since decisions regarding the assessment of condition and significance (e.g. link to national or regional objectives) may vary?

Calculations are comparable as long as consistent metrics are used - as in the case studies in the report.

23. What is the value addition of BIAF compared to several other similar systems already in the market?

The main areas are probably explicit specification of impact pathways, focus on change compared to a reference scenario, documentation of assumptions and evidence, and ability to compare fairly across pathways and - especially - very diverse potential investments.

24. Is this only main approach to Biodiversity / project option scoring that WWF is backing / researching. Part of the issue here is market confidence in the various available tools and the ability to choose which one to use.

A: BIAF was developed by WWF Switzerland and The Biodiversity Consultancy. The current version is a method that has not yet been coded or developed into a tool. The aim is to get the formal support of the WWF network for a coded version of BIAF/a BIAF tool.

An example of an approach officially supported by WWF is the WWF Risk Filter Suit (RFS). The RFS (Biodiversity Risk Filter and Water Risk Filter) focusses on nature-related risks and dependencies. The risk filter suite enables the assessment of large portfolios of listed companies. The BIAF, however,



focuses on the impact of project alternatives or investment opportunities on biodiversity. Data from the risk filters can be used to assess the impact on biodiversity.

25. The EU CSRD on green claims is being operationalized. Could BIAF be used by companies to make robust and credible green claims in line with the CSRD and its biodiversity guidance?
CSRD is quite broad, but BIAF will be helpful in identifying opportunities and understanding the scale of their potential. This is ex-ante projection at the moment, rather than measuring impacts at the implementation stage.
26. In Indonesia, our ministry of investment released a sustainable investment guideline, with GRI as a baseline. Is it possible to connect GRI based metrics with BIAF?
GRI, like other disclosure and reporting frameworks, has the main focus on (negative) impacts and risks, and how effectively these are managed. BIAF is focused mainly on potential positive impacts relative to a 'business as usual' (non-project) scenario, and therefore isn't best suited for assessing absolute footprint impacts and risks. BIAF can however inform GRI-101 ('Biodiversity 2024') disclosures related to opportunities and positive actions, specifically 101-2f (how actions to manage biodiversity impacts maximise positive impacts for stakeholders), 101-2a iv (offset actions) and 101-2v (transformative/additional conservation actions). BIAF may be especially useful when positive actions aim to reduce pressures or involve policy/technology solutions beyond a delimited site. GRI-101 uses the same ecosystem extent x condition measurement approach (101-7) as BIAF, though significance is not included as a part of the metric but as a qualifier for risk.
27. Does the tool intersect with the natural Capital Accounting protocol from the Capitals Coalition?
The Natural Capital Protocol is a broad framework. Within this framework, BIAF can be used to identify and assess changes in impact drivers (step 5 of the NCP) and resulting changes in the state of natural capital (step 6) using the BECS measurement approach.

Technical details- General

28. Will the assessment framework be different for different geographical zones?
The framework remains the same, but expected condition change and especially significance weighting may be different for different biomes and different parts of the world.
29. Do you have a list of the impact pathways used in the model?
In the appendices to the method document there is a list of potential routes to negative impact, a quick check sheet to make sure you have not missed material ones. You also have a list of the broad types of positive pathways with guidance on how to interpret those in terms of the time frames. It's difficult to have a list of all positive impact pathways because they are very numerous and specific, but the case studies will give some ideas of the ones that have come up so far. Our aim for the future development of BIAF is to standardize the most common impact pathways and link them to relevant datasets, so as to simplify the assessments.
30. Does your scoring model incorporate the mitigation hierarchy?
Although BIAF does not explicitly incorporate the mitigation hierarchy (MH), it can be expected that a project or a business that follows it and reduces considerably the negative impacts on biodiversity (compared to business-as-usual or the reference scenario) will achieve a higher score. Identifying pathways with potential negative impacts can also highlight where further attention to the MH may be needed.



31. How does the tool work should a project e.g. a pipeline be installed and go through various landscapes and even smaller ecosystems. It may even move from a more rural area and into a city environment. BIAF is designed to recognize that locations are different, mostly through the significance element. Therefore, it is important to decide what you want to measure for significance. Make sure that's relevant to your institutional or investment fund aims or to whatever global goals you're trying to achieve, because the answers can be quite different, depending on what you're measuring. STAR, for example, is fairly granular at the 5 by 5 kilometer level at the moment, and that will probably get better in the near future. The challenge is that it's not yet available for freshwater ecosystems; but that should change within the next two years. That's why we've had to use the next best available measure, which is the WWF Hydrosheds-level data, which is quite spatially coarse. At the same time, for many of the projects we've assessed, the location specificity is also pretty coarse, often just at the country or even the regional level. There will be uncertainties, and it is important to recognise them (this is one of the aspects that we hope to capture in a more quantitative and standardised way in a future iteration of BIAF), but the broad-brush picture as to what is likely to have a large impact versus a small impact should still be valid in the interpretation.
32. Would be great to have some insights on the financial benefits from the range of solutions you have identified. Can this be modelled in?
BIAF is only one element for decision making. There are many other aspects to consider. The economic viability is one of those. We have not yet deduced a systematic scoring approach for transformative potential. It is much more likely in most cases that if you can see economic benefits, cost savings, then the transformation potential will be greater. In addition, it is important to consider how to translate the potential gains into real gains, not have them derail by economic considerations. In short, this is a complicated question, but BIAF is not trying to answer everything; it provides the biodiversity piece as part of an overall decision-making framework for investment.
33. Is this approach also including the dependency on biodiversity, dependency on ecosystem services?
BIAF focuses on biodiversity, rather than other aspects influencing investment decisions (see also question/answer on Social Return on Investment). However, the metric for significance can be chosen to align with a particular organisational goal - if a primary aim is to maximise ecosystem service provision, then a relevant significance metric can be selected on that basis. The approach can thus easily be tailored (so long as suitable metrics are available) and a set of options might be included in future iterations.
34. Really like the explicit (qualitative) identification of impact pathways. With all the quantification going on this is sometimes overlooked. It clearly shows the need to take a step-by-step approach starting with a clear reasoning of impact pathways. This will also show what data is (ideally) needed and what data gaps exist when looking at the data available.
Thanks for the comment! - that is exactly the rationale behind the BIAF approach.

Technical details- Scoring

35. Would the biodiversity impact score always come out as a number between 0-1? Or if not, what is the min-max scale?
The minimum could be close to zero as there is no lower limit for condition change. The maximum is hard to assess, as not all 3 BECS dimensions can be maximized simultaneously. The maximum might be around 6 or 7 in practice.
36. Not sure if summing the scores of the positive impact pathways of one company helps from a comparison perspective? I guess the real value is in the information per impact pathway (which pathway to optimise, which pathway to manage).



The advantage of BIAF is that you can use parts of the assessment (e.g. single impact pathways, partial scores), depending on your interests and needs.

37. Is the score calculated for the overall project or should it be done by each expected benefit of the project?

Each impact pathway is scored in the Extent, Condition and Significance dimensions, which are then multiplied to generate a (partial) score per impact pathway. These partial scores (including negative scores for any material negative impact pathways) are then summed up to generate an overall score for the project or business model as a whole.

38. How would you suggest fund managers evaluate their overall biodiversity performance in diverse investments in companies with individual BIAF scores? Can you recommend simple addition of individual scores?

The assessment allows impact managers to understand how impacts on biodiversity are created, so it helps fund managers to tell the story why and how they are benefiting biodiversity. Currently, BIAF allows to make an ex-ante comparison of expected impacts on biodiversity (most specifically, opportunities) but we plan for the tool to allow for a post investment assessment in a similar way. In this way, an investment manager will be able to compare the ex-ante and the realized biodiversity impacts and evaluate how well he/she is creating biodiversity value for the shareholders. Another way to evaluate performance would be to relate it to a corporate or global target. But, at a minimum, fund managers should be able to demonstrate whether they have a positive contribution or not, and BIAF is well suited for this.

39. Some of the underlying data (Hydrosheds level 7 and STAR) have low resolution. How can a company monitor the benefits for biodiversity and allow for claims if their actions are likely to bring very low contributions at the scale used as reference.

BIAF is flexible to use different types of data, either modelled/low resolution or ground-truthed/higher resolution. For the current version of the BIAF methodology we have used modelled data, but we aim to test with the use of local data. For monitoring purposes, the right level of detail for data collection should be used.

Technical details- Condition

40. For the estimation of MSA, what is the baseline assumed? Given the broad spatial distribution of many species, the spatial identification of the baseline is critical. Moreover, some species have higher abundance in disturbed vs intact habitats.

BIAF assesses the change in MSA compared to the reference scenario without the project. The important thing is to document this, with rationale, when doing the assessment. MSA is calculated so that species abundance is capped at the abundance in intact habitat. This improves its performance as a metric for ecosystem condition relative to an intact state.

41. Are there any condition metrics you could suggest/recommend that could be used to quantify and assess condition of different habitats?

The default reference basis for scoring condition is the Mean Species Abundance (MSA) metric. But there are many potential condition measures, which may be more or less relevant for different ecosystem types (for example canopy cover, species richness, water chemistry or dispersal processes). Further information on such metrics is available in (for example) TNFD guidance and in UN-SEEA ecosystems documentation.

42. Using only MSA is enough to estimate nature condition?



For the broad-brush ex-ante comparisons in BIAF, MSA provides an adequate estimate of ecosystem condition (and note that MSA is estimated based on land-use/intensity, pressures or recovery rates, not measured on site). For assessing outcomes, especially at specific sites, a set of other ecosystem condition measures may be more appropriate.

Technical details- Scale

43. As scale is considered in the measurement and has such a big impact in the results, is there a way to avoid affecting small scale projects to be appealing for attracting investment?

The scores should not be taken as the be all and end all. These are just parts of the information that helps inform decisions. The important thing is: what decisions are you trying to make? If you already know that you're going to invest in a particular project or investment, BIAF can be a way to map out what the impact pathways are likely to be, which are the most important ones, which ones you can do the most to improve, and which ones you might need to address to make sure that they're not negative and undermining your project. If you want to compare different investments, then this provides a fair and standardized way of doing that. You might decide that the ones which are very small scale for the invested amount are not an efficient use of money. On the other hand, if they're also not taking that much investment, then you might reconsider from an impact per dollar point of view. BIAF is a method to support decision making, but you need to know what decisions you want to make in advance so that you can apply the method in the most appropriate way. BIAF isn't trying to incentivize or disincentivize anything except better biodiversity outcomes. BIAF enables users to invest in nature with open eyes, understanding better what the impacts will be and where they can have the most bang for the buck.

44. If the company is so "small-scale" that a number of these impacts are not "significant" — don't many small and insignificant companies add up? Does biodiversity even matter at these small scales? Where is connectivity?

BIAF is intended to inform comparisons between investments/projects, and also within them (for different impact pathways). A threshold for impact materiality in a pathway is needed so that effort is not put in to scoring individual pathways that will have minuscule impacts (though note that different impact pathways for GHG emissions are scored collectively, as they have a common mode of action). Of course, any positive impacts on biodiversity are to be welcomed, even at very small scale, but for tiny companies other assessment approaches may be more useful (e.g. use of a taxonomy to show that activities will be overall biodiversity positive, without quantifying the impact). BIAF can also potentially be used for cumulative assessment of small companies with a similar business model, where impact pathways are shared and overall scale can be established.

Technical details- Uncertainty

45. What are the uncertainties in comparing across solutions given these are also location specific?

There are several sources of uncertainties related to each individual score/impact pathway. This is one of the things that we hope the next iteration of BIAF will capture better in a more quantitative and standardised way. But BIAF is designed to recognise that locations are different for biodiversity, and that's the importance of the significance element.

46. Already thinking of a data quality score for the data used in the calculation (e.g., comparable to data quality in PCAF - carbon accounting - and some biodiversity footprinting methodologies)?

Yes, that would be part of the uncertainty assessment in a future version.



Technical details – Requirements and resources

47. Could you please elaborate more about "removing the need for a specialist"?
- We would like to automatize the framework as much as possible, so that the need of biodiversity expertise and the time needed for the analyses would be reduced.
48. Does the model require exact location of the intervention? If yes, what options are available?
- BIAF allows you to come up with an answer with incomplete information, including on spatial location. However, if there is information about the actual location, that's better for scoring. The more precise information you have both on the location and on the activities, the better the answer will be. We aim to incorporate an uncertainty element in future iterations of BIAF, which will be useful to account for unknown or incomplete information for scoring.
49. I'm curious if you could share more detail about where the most time is spent in the 10-day assessment timeline and where the bottlenecks are, and how the process could be accelerated or adapted into a "lite" version for faster assessments. For example, the Cool Farm Tool is an example of a relatively rapid evaluation tool in the GHG space — how BIAF begin to approach that level of efficiency and expediency? Each assessment is different, but in general we can say that the most time is spent on validating the impact pathways, filling gaps in the projections/information provided by the companies and estimating the condition scores for impact/pressures that are not readily available in global/public datasets. In future iterations of BIAF, we aim to standardize the most common impact pathways and link them to the appropriate datasets to automatize scoring.
50. What input data does BIAF require for the scoring?
- The key data are the business projections in terms of what will actually be done in the considered timeframe. That allows you to define the different impact pathways, look at the scale, and relate to the measures of Extent, Condition and Significance. We also use data from global datasets, but in many cases we have to do some research to fill current gaps. The exact information you need depends on the context.

Case studies

51. Would the cement-free technology example count as a Nature Based Solution as per the IUCN and TNFD definition?
- The cement-free technology addresses societal challenges and benefits nature by reducing limestone and aggregate extraction and reducing GHG emissions. These effects are indirect through pressure reduction rather than being directly focused on protecting, sustainably managing and restoring nature. A more detailed analysis of the company with the Nature-based Solutions lens would be needed to define whether it can be classified as such.

Co-benefits, additional features

52. Does the framework also consider / encourage co-benefits?
- BIAF is focused on biodiversity, but the expectation is that social and other nature component benefits would be considered in investment decisions. It's also possible to incorporate aims such as this in the significance measure – e.g, locations most valuable for ecosystem services.
53. How do you work with the concept of the "Tragedy of the Commons" in BIAF?
- BIAF does not explicitly work with this concept. Specification of the theory of change and impact pathways should take into account the evidence base for relevant interventions and be realistic about



economic incentives and disincentives. The BIAF checklist for potential negative impacts also requires consideration of possible unintended consequences.

54. SROI (Social Return of Investment) method is rising in popularity, do you have some thoughts on how it could be connected with BIAF as well?

Currently, BIAF is focused on biodiversity and only considers social issues if they may have a direct impact on biodiversity. This is not to disregard the importance of SROI, but for the practical reason that comparing impacts on biodiversity in a consistent, science-based way and with relatively little effort is already a big challenge. BIAF provides information on biodiversity impacts to inform investment decisions, but such decisions will usually consider many other factors, including social impacts. We encourage BIAF users to adequately address SROI using other tools, and at minimum to consider suitable safeguards in line with 'nature positive' thinking, i.e. that biodiversity-positive investments should not have negative consequences for climate, non-living components of nature, or local communities.

Future development of BIAF

55. Future of the tool - noting you are seeking consultants/companies both to test and host the tool as it becomes integrated into a user interface. What will be WWF and TBC's roles in the future?

Our vision is to develop BIAF into a biodiversity assessment tool that will be taken up and used by all types of decision makers, e.g. impact investors, project managers, development banks, consultants advising clients on project alternatives. BIAF provides a biodiversity lens to inform decision making processes. WWF will stay involved, as we initiated the idea; it will contribute the knowledge and expertise from our network. TBC will stay involved as a biodiversity advisor. To develop BIAF further we need more expertise, e.g. on technical questions. Therefore, we'd love to be joined on our journey by other experts, NGOs and consultants in a multi-stakeholder effort.