



Natural Capital in Practice: 28 May 2019

The Natural Capital Coalition Webinar **Natural Capital in Practice** offers free discussion of current perspectives and applications of natural capital. The calls are held under Chatham House rules. This document provides an overview of the presentations delivered during the call.

1. Gaps between conceptual and operational implementation of Natural Capital Accounting in a developing country context

Presenter: Dr. Julia Baker (Balfour Beatty), Helena Newell (Conservation Capital)

Julia Baker works as biodiversity specialist for Balfour Beatty which is a contractor financing and building various types of infrastructure projects such as roads, railways, oil pipeline, energy supply, housing and social infrastructure. What we've seen over the last years is a rapid increase in application of biodiversity net gain or no net loss, especially from our clients and lenders. Biodiversity net gain is based on a series of best practice principles such as those developed by the Business and Biodiversity Offset Programme. The first principle is the mitigation hierarchy. This is a series of steps where development projects avoid biodiversity loss in the first place, then minimize a loss, restore the loss and the lastly would be to compensate the loss.

But while we are getting better at the biodiversity aspects, we still have yet to fully address how these projects affect people. We need to take much better account of the social impacts from biodiversity net gain / no net loss, especially as most of these impacts fall through the gap when ecological and social impact assessments are undertaken in silo. So, we asked the question about what these impacts are and how we can avoid and minimize the negative ones and maximize the positive effects for people.

As an example (see slide 7): a group of houses is located close to a woodland. An ecologist with a biodiversity perspective would survey various ecological attributes. But we need to have a greater understanding of the various ecosystem services that the people living near the woodland will benefit from. These might be immediate needs such as food, fuel, building materials, cultural sites or recreational benefits as well as the wider benefits such as improved air quality, soil stability, climate regulation or reduced flood risk. Then the development occurs, which in this case involves the loss of the woodland to build a hotel complex (slide 8). If good practice has been followed, it might be that a biodiversity offset is necessary to generate biodiversity net gain. So, from a biodiversity point of view, net gain is achieved. The problem is that people living near the development site have lost all the ecosystem services from the woodland they were obtaining. Also, different people have benefitted from the offset but if we look at it in detail, fewer people have benefitted and in different ways. There is a disconnect and social injustice, which are key issues to address.

In 2018 Julia was part of a team who developed new international principles, setting out good practice for people for development projects seeking to achieve biodiversity net gain ("Ensuring No Net Loss for People as well as biodiversity: good practice principles"). These principles provide a framework for developments to demonstrate that they followed good practice for people when designing and implementing biodiversity net gain. As a practitioner the most important thing is to know how to implement these principles. In other words, what tools are out there to better understand the social and economic impacts of biodiversity no net loss and net gain. That is where Natural Capital Accounts (NCA) came in, and in a very exciting way. Julia was fortunate to work on a pilot with eftec and BBOP / Forest Trends on Natural Capital Account of Biodiversity Net gain and No Net Loss development. We found that Natural Capital Accounts can greatly help to address current gaps in addressing social impacts of biodiversity net gain.



Also, Julia works within an industry setting where monetary values can significantly influence project decisions and raises the profile of biodiversity in a way that the traditional impact assessments have not done. But it's important to equally show the benefits for people that you cannot put a monetary value on. This certainly influenced decisions in a positive way, and especially to improve our application of the mitigation hierarchy. For example, when you are talking about avoiding loss of a woodland from a development project, with Natural Capital Accounts it is no longer just about biodiversity but also the monetary, and non-monetary benefits of the woodland for people. However, when using Natural Capital Accounts at a project level, the challenges we faced included limited data and the necessity to merge Natural Capital Accounts with Environmental and Social Impact Assessment (ESIA) and Biodiversity Net Gain principles.

Helena Newell presented their case study on the Katosi Water Treatment Plant in Uganda which involves construction within the forest on the shore of Lake Victoria. The Ugandan government has initiated the use of No Net Loss and started to conduct Natural Capital accounts at the national level but currently there is no link between the ESIA's, No Net Loss and the national level Natural Capital Accounts. Infrastructure projects in Uganda do risk negatively affect the large rural population who depend on biodiversity. Our case study looked at the study area of around 55 ha. The area is currently used by the local community for grazing, farming and fishing among other activities with access to the lake at the bay which you can see on slide 12. Our aim was to use the case study of a Natural Capital Account of an infrastructure project in Uganda to explore the decisions that need to be taken to support the design and evidence-base for no net loss of biodiversity that is sustainable and fair to project-affected people.

Our objectives were to quantify the stocks of the biodiversity components of natural capital and the flows of ecosystem services for a baseline, post-construction and 30 years after construction, in order to explore how decisions on the baseline, counterfactuals and scenarios affect the flows of ecosystem services and to evaluate how this influences the operational use of the NCA to design no net loss.

The graphic on slide 14 demonstrates the conceptual interactions between nature, people and the projects. It highlights the various stocks in natural capital and the flows of Ecosystem services as well as the impact and dependencies of people and the project on nature. It also illustrates the no net loss principles for people and biodiversity. We use it to explain the elements that we cover within the scope of our natural capital accounts. We focus on the biodiversity components of the stocks of natural capital and the flows of ecosystem services considering the no net loss for people and biodiversity. We identified two project level NCA frameworks: The Natural Capital Protocol and the Corporate Natural Capital Accounting produced by eftec, RSPB and PwC. We adapted these to create a structure illustrated on slide 15 for undertaking an ex-ante project level account. From the frameworks and the no net loss literature, we identified key decisions to be taken within the implementation of the NCA.

In order to conduct our NCA we collected data on the stocks of the biodiversity components of natural capital and the flows of ecosystem services at the 2016 baseline. We then estimated these post-construction in 2020 and 30 years after construction in 2050. Due to time limitations, we had only a short primary data collection period and focused on observational data only. We did not directly collect data from local people and obtained project information from the ESIA, supplemented with secondary data from Ugandan data sources as well as from peer and non-peer reviewed literature.

Within the limitations of our data collection, our NCA figures on slide 17 are helpful to highlight the decisions and uncertainties with conducting a NCA. We estimated the project would lead to the loss of 2 ha of tropical forest, 46 ha of bush, 7 ha of small-scale farmland and the gain of 26



ha of build-up area and 29 ha of woodland. The net loss of monetary flow of ecosystem services was estimated to be 161 million UGX. Something which is clear from our experience of conducting a NCA is that the monetary value of the change of provision of ecosystem services only highlights a part of the picture. The monetary values are subject to uncertainty and based on the decisions taken within the NCA as well as there being many ecosystem services which are either inappropriate or too difficult to quantify and apply monetary values. The importance of the decisions within the NCA was highlighted by our experiences in the field: for the monetary valuation, the price of goods is fundamental. In Uganda these prices vary considerably between the wet and dry season for some products as well as the availability of these goods in the market in order to quantify and estimate. Therefore, the time of year when assessments are conducted has considerable impact on the monetary value of the provision of ecosystem services.

The monetary valuation did allow us to test the decisions and assumptions that were part of our NCA. If you consider the access to the deforestation area, post construction and after 30 years, if no access was granted for local communities, the net loss of ecosystem services was 1.1 times greater than the base case. However, if full access was granted, this may have been positive but there would likely be feedbacks into the stocks of natural capital and the provision of regulating services. We also found that the decision of the baseline and the counterfactual has substantial impact on the net result. If we consider the counterfactuals, the baseline net loss is 193 million UGX. If population growth was included, the net loss was 3.9 times greater.

Our case study was the first to develop an ex ante NCA of an infrastructure project and highlighted that there remain major gaps between the conceptual and the operational implementation of project level NCA. There is a need to apply these frameworks and the learnings of this case study to larger projects and for landscape level use. There are major uncertainties and decision-points which can have fundamental impacts on the resultant NCA. There is a need for further research in some of the areas in NCA, particularly on how to measure and manage the project's dependencies on natural capital. There is also a need for research to be translated into practical and feasible guidance on the implementation of these NCAs, based on case studies which should help to encourage uptake.

According to Julia's experience, project-level NCAs can improve the understanding on how Biodiversity Net Gain or No Net Loss projects affect people. This can also greatly improve the mitigation hierarchy but requires NCAs to be undertaken as early as possible in the project lifecycle. It should be part of the masterplanning stage right through to the outline design as part of the iterative process when you get into detailed design between impact design changes and back again. Decisions on the baseline and counterfactual in the beginning affect accounts. There is a lot of literature about the baselines in biodiversity net gain and ESIA but it is different for people, especially when you look at the monetary value and how that changes over the year. We have to make decisions, be transparent about it and justify those. We must be explicit on the uncertainties and assumptions underlying the accounts, especially when ESIA's don't uncover people's complex relationship with nature. This is especially important in the early stages of projects when you might not have all the data. This also implies that the assumptions need to be updated later on when we can update the NCA. NCAs can refill the gap and uncover the relation that we as people have with nature. You should look at all the benefits but not all benefits are appropriate to assign monetary values. We are still trying to get better at the final account and having equal rating for the monetary values and the benefits that are not appropriate to assign values to. Decision-makers or engineers get drawn to that monetary value and we are certainly looking at ways to get better at raising the importance of all the other benefits. The next step is to go back to the good practice principles which are all about changing people's wellbeing. It's about using NCAs as one tool in our toolbox and merging that within assessment of change in



people's wellbeing. NCAs give us so much information that we haven't had, and the next step would be to use it alongside assessments of people's wellbeing.

For more information please contact Julia Baker (julia.baker2@balfourbeatty.com) or Helena Newell (newellhelena@gmail.com).

2. Q&A discussion

Key themes arising from the discussion are laid out below:

i. What do you think must happen for Natural Capital Accounts (NCAs) to be undertaken for individual development projects on a systematic basis and at an early stage of projects?

Often times we hear that there should be laws or regulations to drive change, but in my opinion it's far more effective when industry itself wants to do NCAs. So, we are engaging our clients for NCAs to be included in the tender process of major infrastructure developments, and then it becomes part of the project and budget. It's also important to spread the word along the whole supply chain to mainstream approach and to not just look at the traditional ESIA's. We need to add the other requirements in terms of NCAs. So, before regulations, collaborating with and engaging industry can be extremely effective. Also developing case studies where people can see the benefits of doing this and that is when the interest comes in.

ii. On large linear projects key decision on route / strategic optioneering is undertaken prior to surveys initial Environmental and Social Impact Assessments. How have you considered inclusion of high-level Natural Capital Accounts in these very early stages? Is it based on national datasets?

Yes, and these are undertaken alongside a Biodiversity Metric for biodiversity net gain assessments. Even at an early project stage when there is limited data about a project, NCAs are possible for example by using google maps to gather data on habitat types for the Biodiversity Metric, and this can inform a NCA. In some projects we could purchase habitat maps online, but this depends on the level of detail. Even just with an outline design of a scheme you are able to get an idea of the habitats that are in there. I always add a list of uncertainties and assumptions, as well as the information required to update the Biodiversity Metric and the NCA throughout the project lifecycle, so this is clear.

iii. A participant used to do extensive ecosystem services work on an ex-ante infrastructure project in Mali. The local stakeholders found the physical indicators much more important than the monetary valuation. How did the local stakeholders react to this in Uganda?

The monetary valuations that we use in the presentation are an illustrative representation. A full NCA would include the physical indicators, the monetary valuations as well as the qualitative discussion which is equally as important because there are elements very difficult to quantify or the quantification is not representative or inappropriate. You definitely need to include all the elements and each element has its own uncertainties and challenges that need to be communicated.

Sometimes the things that matter most to people are those that you cannot put a monetary value on. In Uganda the cultural value of a site to the local people is very strong. The case study is a good example of the decisions that Uganda has taken between these massive infrastructure projects that are at a national level helping to lift the country out of poverty and are incredibly important vs. the local level impacts. A NCA can help here to make the local impacts far more explicit. Us practitioners need to make sure that non-monetary values have at least the same or even greater importance in a decision-making process.

If we want to use natural capital in way that it reflects all the values, we need to use it alongside wellbeing assessment.



iv. Is your approach compatible with the national approach to natural capital accounting? We need a method that is consistent across different locations and scales so that comparison is possible and context can be provided.

We found a disconnect between national level and project level NCAs. Many national level NCAs are retrospective in nature, which then inform policy, whereas project level NCAs are used up-front to predict impacts and inform decisions. Project level NCAs should also be used to predict how dependencies will change under biodiversity net gain, but we need more published case studies to inform a conversation on linking national level accounts to the project level accounts. In our experience in doing the case study it was very difficult to use the work that has been going on in terms of national level NCA in Uganda and applied to the project level because of the scale at which it has been conducted and also the retrospective nature of it. This comes back to the point of feasible and practical guidance as there needs to be a link between the two and about how NCAs at the project level can contribute to the national level NCA. What we found during our discussions with stakeholders in Uganda is that they felt that the national level NCAs were very useful and reported to international committees, but they were not necessarily helpful to make decisions on the ground.

v. How easy and straightforward was it to apply the Natural Capital Protocol to this specific situation on Biodiversity Net Gain on a development project?

The Natural Capital protocol was fantastic, and we brought that together with the Natural Capital Accounting Framework. This conceptual side was very helpful in creating a framework for practical implementation. But in terms of practical guidance of how to use NCAs to inform decisions on biodiversity net gain, and what data you need, further guidance would have been helpful. One of Julia's previous NCAs were applied in the UK where there is a Biodiversity Metric, but in Uganda there is no biodiversity metric yet so that was a challenge in terms of linking the Protocol to biodiversity net gain. Also, the biodiversity component and how stocks in biodiversity are linked to flows of ecosystem services needs further consideration.

One of the issues regards uncertainties and deficiencies in the ESIA process. The constraints faced when doing ESIA's (often have to be done quickly, tend to be quite limited) could be improved by investing more time and resources into surveys and assessments. You have to invest in NCA before you actually start the project and then this requires more time, more effort and I guess it's about trying to change the mindsets to make people feel it's actually worth investing in that time and effort. Although we could have more tools and guidance, I guess what we really need is some will. The more we have case studies and people worked through these issues, the easier it will become and the more feasible it will become for people.

vi. What are the main synergies between these three approaches: NCAs, ESIA's and Biodiversity Net Gain?

One thing we tried to tackle within our case study is how to bring these three elements together. A NCA actually enables you to bring ESIA's and No Net Loss assessments together, especially to assess the project's impacts on both biodiversity and people – this can then inform decisions. A NCA also allows you to develop a No Net Loss assessment during the early stages before the project design is finalized. Then as construction begins, you are able to monitor and evaluate the delivery of no net loss for both biodiversity and people.

The data you collect for an ESIA involve some habitat data collection. We typically need more detailed habitat data for a biodiversity metric. We then can use that data for the NCA but still need data for the monetary valuation. These three concepts (NCAs, ESIA, NNL) add different data to the puzzle to understand if this project is truly sustainable, not just for biodiversity but for people. NCA also looks at dependencies and that is not covered at all by traditional ESIA and generally not covered in a biodiversity net gain project.



vii. When you refer to NCA, is the account a natural capital accounting using the UN SEEA standards or are you referring more generally to accounting for natural capital?

Our focus was on using the Natural Capital Protocol and the corporate natural capital accounting frameworks. Those reference to the other policies that are slightly distinct and focus on the project level impacts and dependencies. We found the Natural Capital Protocol very useful in the guidance it provided.

viii. How did you address risks of double counting of Ecosystem services analysis?

We mainly focused on monetizing the provisioning ecosystem services, there was limited double counting that could occur in that segment. However, if we attempted to monetize every different one of our ecosystem services, there would have been potential issues for double counting that we would have then needed to take account for.

So sometimes it makes sense to group and summarize ecosystem services. You have to do a sense check along the way and make sure you captured everything individually but then also track the loss or gains on the individual level. Different habitats might provide the same ecosystem services, so a careful check is needed to make sure you actually appropriately accounted for all of the ecosystem services provided by various different habitats. The key is to look at every individual ecosystem service, even if you have different habitats contributing to one ecosystem service.

In terms of what people value for their livelihood, individual habitats are particularly important as well as ecosystem services. An individual habitat will potentially produce a different number of ecosystem services. We have to be very careful not to double count and also be respectful of the wellbeing aspects of people's use of particular habitats and ecosystem services.

ix. Is there any effort to scale or replicate this kind of assessment?

Yes. The more we raise the questions on how biodiversity net gain affects people, the more we can look back and realize that we haven't gone to this level of detail that a NCA can provide with-in past biodiversity net gain projects. So NCAs are now part of the services we provide. This helps to raise to profile of biodiversity net gain and we would like this to become mainstream within our work.

x. Is the Natural Capital approach welcome by public authorities?

We found very positive response in Uganda for Natural Capital Accounts. Uganda is under-going a vast expanse of infrastructure development projects throughout the country, but the authorities are aware of the potential damage to Uganda's biodiversity and welcomed NCAs. When we talked about the disconnect between Uganda's natural capital on the policy level and now making this transition to NCAs at the project level, which they were very keen to apply.

The natural capital topic came very much from Uganda and not us. When we started, we were talking about a business and biodiversity forum we wanted to set up with Ugandan collaborations from the government and NGOs. Natural Capital has then come up as a much more salient concept.

3. Update on the Coalition's activities

i. Natural Capital Checker

The Natural Capital Checker is a new tool for companies to understand the robustness of their Natural Capital Protocol assessments. The Checker aims to give businesses confidence that the assessment results are fit-for-purpose for their objective and helps identify where this confidence could be improved. The Checker enables self-validation of natural capital work and uses a simple downloadable form with only 11 questions. The draft Natural Capital Checker is available for testing and review [here](#). We would encourage all of you to please take a look and to send us your thoughts on it over the Summer. The final version will be launched in November this year.



ii. Natural Capital Week 2019 in Madrid: save the date!

A new version of the Natural Capital Week is planned from to take place from November 4th – 8th in Madrid this year. The European Business and Nature Summit is happening at beginning of November (7th and 8th) and we chose to host our collaboration day on the 6th November. This is generally networking, hearing case studies, a chance for good discussions and critically agreeing on what the priority should be for the natural capital community and the Natural Capital Coalition. We Value Nature will also host a event there this same week and probably other events will follow.

4. Future Natural Capital in Practice webinars

iii. Coalition survey

The survey has been instrumental in shaping the future of these calls and offers the chance for members to suggest future topics for discussion. Members were reminded to please complete the survey, even if they have done so previously:

<https://nccoperations.typeform.com/to/zAOeOt>

iv. Upcoming dates

The next Natural Capital in Practice call will be on the 2nd of July. Further information about the agenda will be circulated shortly.