

FBIP proposal writing guidelines

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SANBI

March 2020



science & innovation
Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



National
Research
Foundation

Foundational Biodiversity Information Programme



Purpose of the presentation

Due to the Covid-19 crisis, the workshop planned to assist potential applicants for FBIP funding has had to be cancelled. This presentation covers the main points for successful FBIP proposals and serves to assist those researchers who intend submitting proposals.

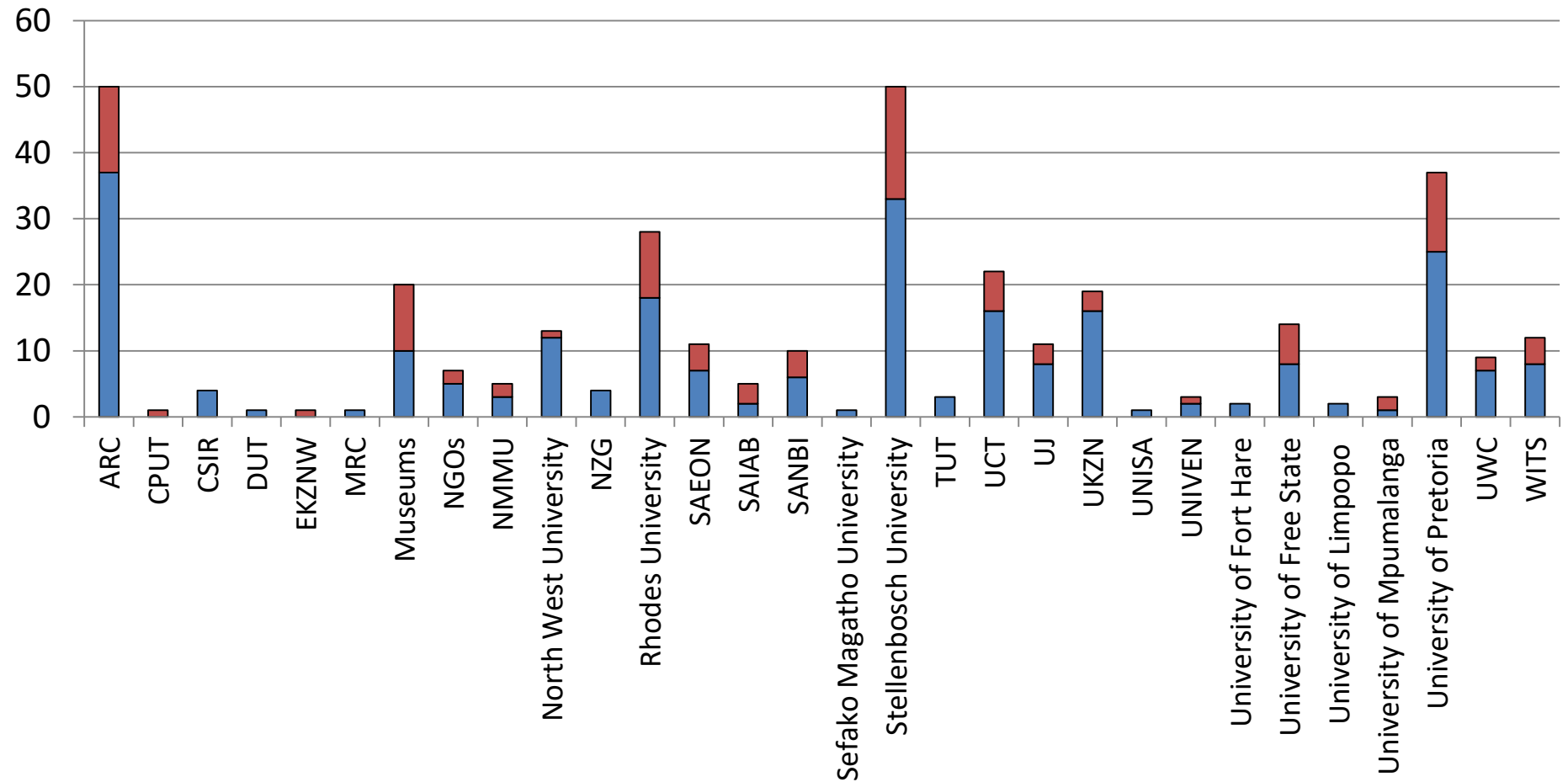
From the FBIP's perspective:

- We want to improve the quality of proposals so that we can allocate all funds available in a way that delivers on the Programme's commitments.
- There is also a need to ensure that grants are spread across institutions, age groups, races and genders.

2019: FBIP Inputs Grants awarded to date

404 applications received, 125 projects funded (31%)

Unsuccessful Awarded



2017: 19 out of 72 proposals funded (26%); 2018: 18 out of 65 applications funded (28%); 2019: 9 out of 22 applications funded (41%)

Structure of Presentation

- Scope of FBIP
- Special requirements of the FBIP
- Overall aim of the FBIP
- FBIP targets
- Key Point 1 & 2: Scope of your project and the FBIP
- Key point 3: Context of your project
- The aim and objectives
- Key point 4: Outputs
- Key point 5: Feasibility: the workplan and budget
- Ethics and legal aspects of your work
- Key Point 6: Outputs and impacts
- Important points about Large Grants
- Large grant requirements
- Large grant themes

Background: Scope of FBIP

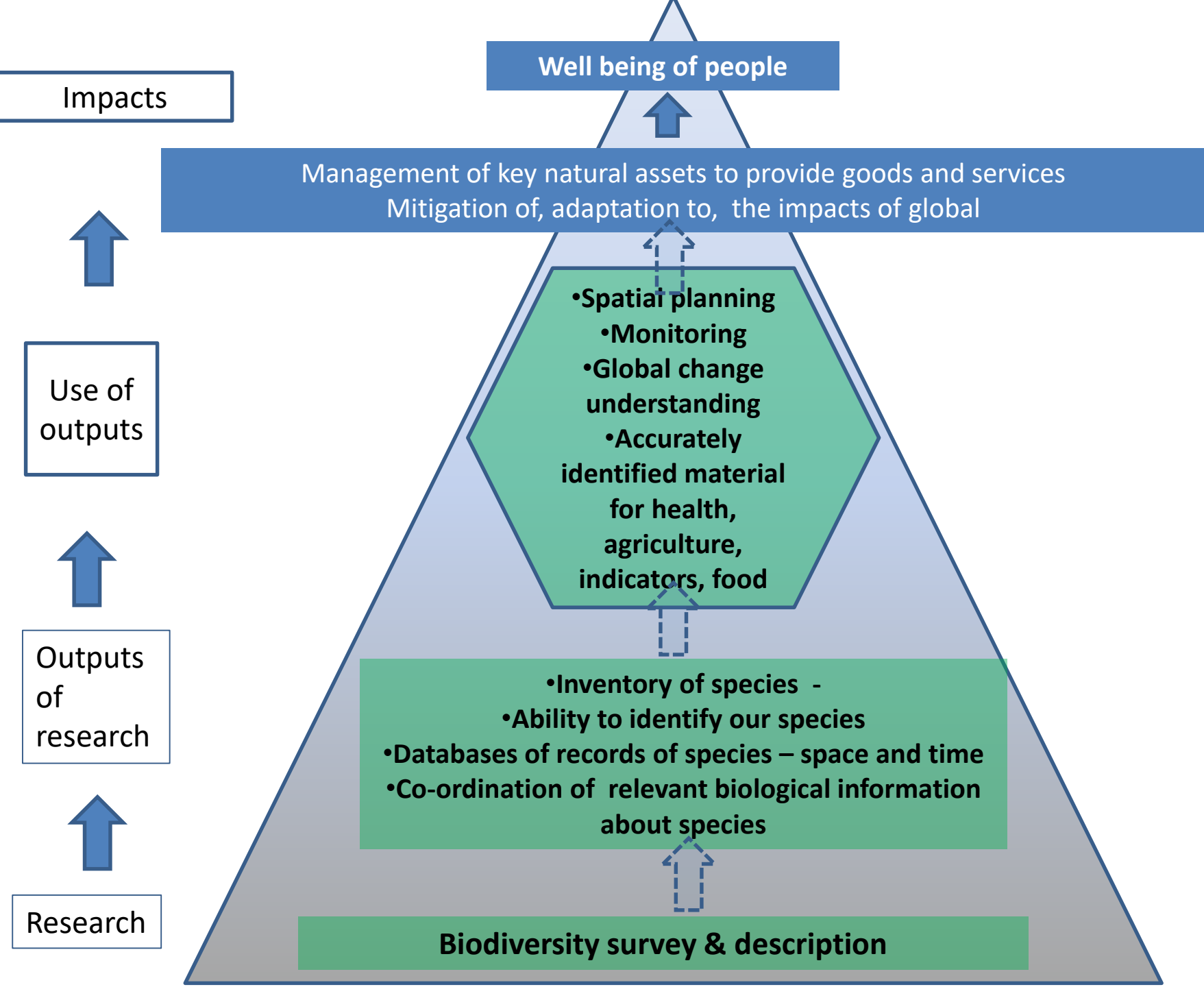
Research and data mobilization to answer the following questions:

- **What species have we got in South Africa?** (surveys, description, including genetic descriptions / diversity)
- **What is it?** (identification tools including DNA barcodes)
- **Where does it occur?** (surveys, collection specimen records, spatial and temporal data, population abundance)
- **What does it do and why is it important?** (Compiling information about priority species – photos, illustrations, legislation, biology, references, links)
- **Aligns with 3 international initiatives: GBIF, IBOL and EOL.**
- **Context of the FBIP is **global change** and / or **bioeconomy****
- **Open access to data generated is a key principle of the FBIP.**
- **Small grants – 1 year, R200 000;**
- **Large grants – 3 years, R1.5 million, and postgraduates would be separately funded**



international
BARCODE
OF LIFE





Well being of people

Impacts

Management of key natural assets to provide goods and services
Mitigation of, adaptation to, the impacts of global

Use of
outputs

Outputs
of
research

Research

- Spatial planning
- Monitoring
- Global change understanding
- Accurately identified material for health, agriculture, indicators, food

- Inventory of species -
- Ability to identify our species
- Databases of records of species – space and time
- Co-ordination of relevant biological information about species

Biodiversity survey & description

Special FBIP requirements

- Data generated through the projects have to be made openly accessible to the broader community (an embargo period is allowed).
- A copy of the data needs to be submitted to the FBIP / SANBI to check quality and whether what has been submitted meets the stated target in the proposal, and for the data to be made accessible on the FBIP website.
- There are specific data standards that must be met. These are set by the global repositories, namely IBOL and GBIF.
- The FBIP follows up with grant holders to ensure that data are submitted, and that these meet the required standards.

Special requirements: FBIP projects

- Because there are so many gaps in our knowledge of South Africa's biodiversity, and filling them will take so long, there is a need to be **strategic** in what is funded.
- The project **must generate data that is needed for decision-making or for some other purpose** so that there is some **impact** (beyond publication of a paper).
- Globally researchers are increasingly being pressured to contribute to addressing the major challenges facing society. If you haven't done so previously, read up about the global initiatives that link biodiversity and society. For example, <https://ensia.com/voices/biodiversity-super-year-2020-policy-science-united-nations-convention-biological-diversity/> is a popular article, that has links to some of the relevant documents. Look at the Sustainable Development Goals, and Future Earth's goals (<https://futureearth.org/>). For the national context, look at the Department of Environment's Biodiversity Research and Evidence Strategy https://www.environment.gov.za/sites/default/files/docs/biodiversity_research_strategy.pdf.
- The project **must solve a problem / address a critical gap**. We must ask the question "*what will change because this project has been done?*". And "*Who will use the data generated and for what purpose?*".

Overall aim of the FBIP

- The intention of the FBIP is to *generate, manage and disseminate appropriate foundational biodiversity information as the basis for research which can catalyse the bio-economy, and for decision-making which will promote human well-being.*
- Overall themes: global change and the bio-economy (green economy)
- **Key point 1** – look at the main aim of the FBIP. If your proposed project does not match the FBIP objectives and targets you are unlikely to be successful.

FBIP targets in its Business Plan

- i. **Co-ordinated species pages** for priority species in South Africa: by 2020: 1000 species pages added (using template)
- ii. 410,000 **specimen records** (primary data) assembled by 2020 (Darwin Core standard)
- iii. **Barcode data** obtained and co-ordinated for 500 species and 2000 specimens by 2020 (BOLD)
- 60 papers
- Large projects: young researchers and postgraduates
- **Key point 2: What will the return on investment for your project be? How much will the project contribute to the FBIP targets relative to the cost of the project? If you don't produce what the funder wants you are unlikely to be successful in your application. If you ask for a large amount of funding and will produce very few of the targeted outputs you are unlikely to be successful.**

Reflection on **Key points 1 and 2:**

Scope of the FBIP

- Is my project within the scope of the FBIP? Is it biodiversity? Is it related to the bioeconomy and / or global change?
- Is it relevant to understanding what species we have, where they are, does it help with identification of species / taxa or compile information in the form of species pages?
- How much will the intended outputs contribute to the targets of the funding programme?

Key point 3: Context of your project

- What is the problem that needs to be solved? Look at some of the big issues facing South Africa and the world and think about the context of your project. Does it address any of these?
- Background: what do we know (literature) and what don't we know – what are the gaps?
- How will your project contribute to solving the problem / addressing the gaps? Being vaguely linked is not enough – it must directly contribute.
- Make sure that you have a clearly stated Aim (= broad statement of overall **purpose** or desired **outcomes**) and Objectives (= specific research issues the project plans to investigate); break down the aim into specific investigations required to address the aim. (The objectives usually result in the production of the **outputs**).
- A point about the objectives – these are not activities, but specific, defined targets that align with the aim.
- Objectives must be realistic – achievable within the scope of the project.
- Check – does each objective contribute to the aim? Will I be able to achieve the objective?
- Is there a gap between my objectives and what is required to achieve aim?



Stating the aim or purpose

- Once you have identified the broad context of your project, and the problem you intend solving, then you can state your Aim or Purpose.

Some good and bad examples:

- This project aims to study the impact of alien invasives on insects.
- We aim to **establish a comprehensive database** of the South African plant species that are used in traditional medicine **to promote their sustainable use**.

Says what will be done, but not why it will be done

- This project aims **to assess the biodiversity of the Pondoland region** in order **to contribute to the management and sustainable use** of biodiversity of the region.

What will be done

Purpose of doing it

The Objectives

- Objectives = specific research issues the project plans to investigate.
- Break down of the aim into specific investigations required to address the aim.
- Objectives must all contribute to addressing the problem that your project will solve. If they don't, then that aspect of the project may need to be dropped, or you might need to re-think what you said the purpose of the project is and what you are planning to do.

An example:

Aim: This project aims to study the impact of alien invasives on insects

- The objectives are: to sample the insects; to identify them; and to analyse the data.

What are the issues here?



An example: This project aims to assess the **biodiversity of the Pondoland region** **in order to contribute to its conservation and sustainable use**

The objectives are:

- To compile inventories of selected invertebrates, vertebrates and plants for Pondoland, including all terrestrial, freshwater, estuarine and shoreline habitats.
- To assess the conservation value of each species occurring in the reserves.
- To identify which species are used by local communities and to estimate the revenue generated or saved through their use.
- To identify key areas in the reserves for biodiversity conservation, for ecotourism development and for sustainable harvesting.

Check that each objective contributes to the aim!



Key Point 4: Outputs: know what you will produce

- What will you produce by doing the project?
- Be specific about this – even if you need to estimate.
- Make sure that there is a clear link between objectives and outputs. Each objective should have an output.

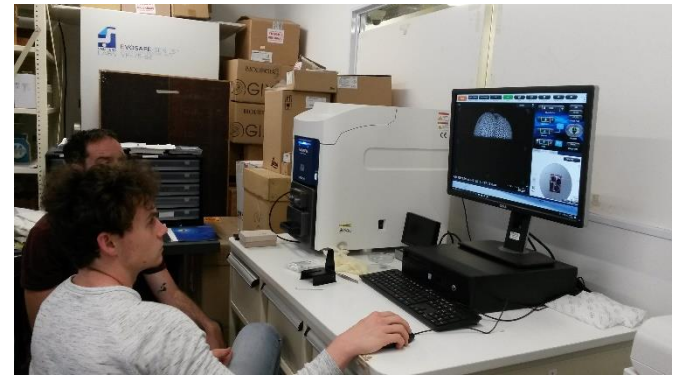
	SMALL PROJECTS SCORECARD	
Track record of applicant	Publications, students	10%
Quality of proposal	<ul style="list-style-type: none"> ○ background with a problem statement / conceptual framework ○ aim and objectives clearly stated and do they align with the problem statement, with the objectives of the programme, and with a specified national strategy? ○ anticipated outputs explicitly stated and quantified? 	20%
Feasibility* **	<ul style="list-style-type: none"> ○ detailed workplan with reasonable timeframes ○ timeframes in line with the FBIP funding period (1 year)? ○ roles and contributions of all participants specified? ○ budget reasonable ○ sufficient detail to allow assessment ? ○ ethical issues including data sharing and collecting permits 	40% (30 workplan and 10 budget)

Key Point 5: Feasibility

- We have to report to the NRF, DSI and SANBI Board on the FBIP, including grants awarded, data sets submitted, progress against targets.
- If projects run over time, or do not deliver, this jeopardises the whole programme.
- Experience has shown us that **if a project is not very carefully planned it is very unlikely to deliver or be completed on schedule**, or the quality of the outputs will be poor.
- The workplan may also include details that allow an assessment of the extent (scale) of the project.

Feasibility: The Budget

- Once you know exactly what needs to be done, and when it will be done, and who needs to be involved, then you can work out what you will need to do the project.
- Make a list of all equipment needed, and from that what you already have or can borrow, and what will need to be bought. What chemicals and approximately how much?
- Work out how many kilometres will need to be travelled, how many nights accommodation will be needed, how many people will be involved in field work. What equipment? How many of each item? How many samples need sequencing? How much will each sequence cost?



SMALL PROJECTS SCORECARD

Track record of applicant	Publications, students	10%
Quality of proposal	<ul style="list-style-type: none"> ○ background with a problem statement / conceptual framework ○ aim and objectives clearly stated and do they align with the problem statement, with the objectives of the programme, and with a specified national strategy? ○ anticipated outputs explicitly stated and quantified? 	20%
Feasibility* **	<ul style="list-style-type: none"> ○ detailed workplan with reasonable timeframes ○ timeframes in line with the FBIP funding period (1 year + 6 months for data delivery)? ○ roles and contributions of all participants specified? ○ budget reasonable ○ sufficient detail to allow assessment ? ○ ethical issues including data sharing and 	40% (30 workplan and 10 budget)

Key Point 6: Outputs and Impacts (=outcomes)

- Outputs should be quantified – how many of each output, even if its an estimate
- We do need to think about the return on investment – how big is the contribution to the FBIP's targets?
- Small projects - grants are meant to be strategic interventions – so they should fit into something bigger rather than just being independent projects
- Outcome or impact: What will change because the project has been done? How important is this change?
- Is there a real connection between the stated impact and the project?

Outputs and Outcomes / Impacts

Outputs:

- What will be produced by this study?
- A database? Of what? How many records are anticipated?
- Pinned specimens / herbarium specimens? About how many?
- Sequence data – what type? For how many species? How many specimens? Do I know what the IBOL standard is for my group? What is required to submit data to BOLD or GBIF?
- A postgraduate degree?
- How many papers?



Outcome:

- What will change because I have done this project?
- Who will be able to use the outputs and for what purpose?
- Links back to the Aim / context / problem that is being solved.



Think about whether the funder will think that what you are producing is good value for money or a good return on the investment.

In some cases, there may not be very many FBIP-aligned outputs, but the impact will be very high. In other cases the impact may not be very high in the immediate future, but the number of outputs is very high. Both these scenarios would mean that the project has some value to the funder. The best scenario of course is lots of outputs and high impact.



Outputs & Impacts

- o Proposed outputs in line with the FBIP (i.e. taxonomic data, occurrence/population data, species information, DNA barcodes) and relevant for global change or the bio-economy
- o Are stated impacts realistic?
- o Users of the knowledge/information identified?
- o Is an appropriate national strategy identified, and is the contribution to this specified and accurate?
- o Consideration given to the format in which the knowledge/information will need to be made accessible (even if this is not done by the project)?
- o To what extent will the project contribute to the FBIP deliverables?

30%

Note on scoring of proposals for small grants

- If the Feasibility scores less than 3, the proposal is considered to be unfundable.
- It would score less than 3 if it was evident that there was no real plan yet for how the project would be done, or if the scale of the project seems too big to be completed within the timeframes of the FBIP, or if the capacity available does not match the scale or the scope of the project, or if the proposed activities in the workplan do not match the objectives.
- If the Outputs & Impacts scores less than 3 then the proposal is considered unfundable.
- A proposal would score less than 3 for Outputs and Impacts if there would be very few outputs produced in line with the FBIP targets, or if the impact would be limited to academic interest only. It must be very clear who would use the outputs from the project, and how they would use them to solve a particular problem / challenge. It is not necessary for the researcher to actually do the problem-solving themselves, but just how the outputs will be accessed and applied by the targeted user/s must be explained.

Large Grants: some important points

- All the points made for the Small Grant proposals apply to the Large Grants, but of course the scale is very different.
- Large Grants must have a much bigger impact, and produce more outputs than small grants.
- There are a lot more requirements that have to be met by the Large Grants.
- **Being the PI of a large grant involves a lot of co-ordinating across the team members, as well as a lot of project management and administration.** We suggest that the PI must have had some experience in managing large, multi-partner projects. We also advise that budget be allocated to getting some administration assistance.
- Two-step process: 1. Concept notes, and those that the panel believes have potential are developed into full and detailed proposals for evaluation by the panel.
- One or two Large Grants may be awarded in 2020, but if none of the concepts or full proposals are considered appropriate, then no award may be made.

Eligibility criteria for Large Grants

(see FBIP Framework for all of these)

- Team: must be at least 4 institutions involved; and minimum of 5 participants / contributors (one must be from a HDI); and at least 2 young researchers
- Minimum of 3 postgraduates must be trained through the project
- Projects must generate primary biodiversity data sets according to the Darwin Core standard.
- Projects must contribute to the compilation of species pages according to the specifications provided by FBIP.
- Projects must produce DNA barcodes for species, using the recognised barcoding genes and must submit data to BOLD.
- Projects must contribute to science engagement with the aim of creating a society that is knowledgeable about science, critically engaged and scientifically literate.
- Data must be submitted at least 42 months after initiation of project.

Large Grant Themes

More details available in the FBIP Framework document

- **Environmental sustainability:**
- i. Multitaxa surveys, with the geographic area clearly identified on the basis of a large scale proposed development, or neglected areas for which no spatial plan exists for biodiversity, resulting in potentially poor decisions or management.
- ii. Surveys of the biodiversity of a particular habitat / biome that is neglected and important for ecosystem services, across a broad geographic area.
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- **Agro-biodiversity and food security:**
- iii. Crop Wild Relatives: taxonomy and distribution of crop wild relatives in South Africa
- iv. Crop and livestock pests, parasites and disease vectors, with a focus on indigenous taxa
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- **Human health and biocultural diversity:**
- v. Vectors of disease, parasites, pathogens, allergens. Documenting diversity.
- vi. Cultural significance of biodiversity.
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- **Taxonomic revisions of priority South African taxa:**
- vii. The purpose of this theme is to substantially shift the taxonomic knowledge of taxa that require large scale revision, and that have a large component of their diversity in South Africa / have high proportion of South African endemics and that include economically or ecologically important species.

Concept notes

- Details about the methods / approach / budget not that important in the concept stage.
- Most important is the outputs and outcome / impact – the concept note must show that the project has the potential to make a real impact, at a large scale. It must be feasible to complete the project in 3 years, and there must be sufficient capacity to cover all the different aspects proposed. Ideally the users of the data to be generated should be involved in the development of the project.
- Scale – should be big enough to justify a R6.3 million investment (including postgraduate bursaries).

CONCEPT NOTES SCORECARD

Track record of PI	Publications, students, leadership of large, multi-institutional projects	20%
Alignment to focus areas and FBIP	<p>O Is there a clear aim and objectives that align to foundational biodiversity knowledge/information generation, co-ordination, dissemination and application?</p> <p>O Are the proposed activities in line with the objectives?</p> <p>O Is the project concept within one of the focus areas?</p>	30%
Feasibility	<p>O Is the project achievable within a 3-year period relative to the team and resources (funds, facilities) available?</p> <p>O Is there a workplan with reasonable timeframes for activities and with responsible team members identified?</p> <p>O Does the team/PI/applicant have the required capacity/experience to enable the achievement of the outputs?</p> <p>O Are all relevant researchers /institutions included in the workplan?</p>	20%

- O What are the anticipated outputs?
- O Is the need for the data/outputs clearly evident with users of outputs stated?
- O What will the impacts of the outputs be on global change understanding and/or the bio-economy?**
- O Are the outputs and impacts realistic?**
- O What is the scope and scale of the impacts
(international/regional/national/local; narrow field/broad field; multi- or transdisciplinary; what will the extent of financial benefits be; how many stakeholders will be impacted etc.)?**
- O To what extent will the proposed project deliver outputs in line with the FBIP (i.e. taxonomic data, occurrence/population data, species information, DNA barcodes)?

- If you have specific questions please contact Dr Lita Pauw (L.Pauw@sanbi.org.za) or Michelle Hamer (M.Hamer@sanbi.org.za)
- We are working during the national lockdown.

Thanks for your interest.