**Developing a Species Protection Action Plan – An Integrated Approach for Taxonomies, Reporting and Engagement for the Financial Services Sector**

**Concept Paper for Circulation at**

**Investec Bank’s Natural Capital, Species Extinction & Sustainable Financial Markets Event, 30th May 2019**

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**A Strategic Issue: Species Extinction**

The planet is currently experiencing a mass extinction event, with human and business activity being the root cause of species loss and habitat destruction.[[1]](#footnote-1) Recent scientific research finds that from a sample of almost half vertebrate species, 32% are decreasing in population size and range as a result of habitat loss, overexploitation, invasion by alien species, pollution and global warming.[[2]](#footnote-2) As well as species ‘going extinct’ populations of species are diminishing and disappearing. This is the reason giraffes are now on the endangered list, with 40% of the population lost over the last 40 years: *“Population extinctions today are orders of magnitude more frequent than species extinctions. Population extinctions, however, are a prelude to species extinctions, so Earth’s sixth mass extinction episode has proceeded further than most assume. The massive loss of populations is already damaging the services ecosystems provide to civilization …. All signs point to ever more powerful assaults on biodiversity in the next two decades, painting a dismal picture of the future of life, including human life.[[3]](#footnote-3)*

Given the extinction crisis that we currently find ourselves in, making connections between species extinction and our global capitalist system is crucial to driving conservation and species protection. By identifying species loss and extinction as a financially material risk pervasive across all aspects of business, finance and accounting we also identify an urgent need for action, for developing and implementing a **Species Protection Action Plan** to be spread out across the financial sector throughout all elements and levels of the capital markets, their structures, mechanisms and institutions: *“Given this looming environmental disaster, the accounting and business community cannot simply assume that a scientific solution will be found to prevent extinction and the associated risks which it poses to humanity”*.[[4]](#footnote-4)

In the recent book, *‘Around the World in 80 Species: Exploring the Business of Extinction’*, the focus was on investigating primarily two avenues in terms of integrating species protection into the heart of business, finance and accounting and the research led to the development of an extinction accounting framework for corporate reporting (or indeed for reporting and disclosures produced by any organisation at any level) and an extinction engagement framework for responsible investment.

There have been substantial efforts across interdisciplinary boundaries to develop valuations for ecosystem services. These valuations provide an essential insight into how significant is our reliance on ecosystems and ‘natural capital’. Ecosystem services and their valuation allows us to understand how critical these natural gifts are to our survival. Such valuations simultaneously provide an insight into the value of their decline, or disappearance. From another angle the loss of an ecosystem service, or of any aspect of ‘natural capital’ represents a significant financial loss. The value is often arrived at by considering how much it would cost to replace the naturally occurring ecosystem service, where there is a viable replacement. The actual figure of valuation is not the important focus of the valuation, rather it is the magnitude of this value and often its irreplaceability. Where an ecosystem service disappears and cannot be replaced by some artificial alternative then that service has become *INvaluable.* In attempting to value species loss, we have to consider the value at risk were a species to go extinct. Irreplaceable ecosystem services do not hold a value but rather represent a significant and material financial risk to business and society. This material financial risk is a real and imminent risk for many ecosystems. The contribution of each and every species to the healthy functioning, and indeed continuance, of every ecosystem, is scientifically unknown until a species disappears. The loss of any one species can lead to the collapse of an ecosystem – or it may not. Given the millions of species of flora and fauna on the planet it is impossible to know which species are keystone species, which species could have little impact on an ecosystem were they to disappear and which are crucial to an ecosystem’s survival. Ecosystem collapse means the collapse of ecosystem services. It is the interconnectedness of species that presents business, finance and accounting with a massive challenge, as species protection is suddenly recognised as a core and essential component of risk management systems and internal control. Any material financial risk requires risk management tools, disclosure, audit, accountability and monitoring. Any part of the financial system that does not incorporate species protection and extinction prevention into the heart of risk management, mitigation and strategy is failing to acknowledge the massive potential financial losses that could arise were certain species to go extinct. It is helpful to consider some cases which illustrate the crucial role each and every species has to the continuance and survival of healthy ecosystems and to the sustainability of business and finance. Indeed, in order to communicate the enormity of the financial risks attached to species loss and extinction we need to consider illustrations which people in business, finance and accounting can relate to at both a personal level as well as at the level of employment and work-related responsibilities.

***Bee Decline, Finance and Accounting***

Bee decline provides an easily communicable example of how species loss can affect, and is affecting, the value chain, businesses, finance and investment. The latest scientific and economics-based research provides staggering figures relating to the value of pollination services provided by bees. The recent report produced by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)[[5]](#footnote-5) stated that the value of agricultural crop production ($2.6 trillion in 2016) has increased approximately threefold since 1970, but also asserts that between $235 billion and $577 billion in annual global crop output is at risk as a result of pollinator loss.[[6]](#footnote-6) Estimates of the impact of pollinator decline globally average around £130 billion per year.[[7]](#footnote-7) Bee populations are declining globally due to lack of floral biodiversity, pesticide use, habitat degradation and reduction, mono-agriculture and global warming. A recent red list showed that out of a total of 1,101 species, about 15% of bees in the EU are threatened or near-threatened with extinction.[[8]](#footnote-8) Recent statistics for the US estimate around 42% annual loss in commercial bee colonies. Further there has been a loss of around 96% in four wild bumblebee species in North America over the last 20 years. Both commercial and wild bee populations are being affected. There has been an increase in bee loss across France, Italy, Belgium, UK, Sweden, Spain and elsewhere. A recent book, *The Business of Bees*,[[9]](#footnote-9) reviewed the current state of bee decline globally, considered how this was affecting businesses and proposed frameworks for addressing bee decline, and pollinator decline more broadly, throughout the stakeholder value chain (including corporates, investors, policy makers, NGOs and consumers). The text book brought together views from academic research into corporate representation of bee-related risks through accounting with the views of responsible investor practitioners who are dealing with these issues in collaborative dialogue with investee companies, NGOs and policy makers, across the globe. Essentially, decline in bee populations, both of wild bees and commercial bees, represents a significant material financial risk for businesses in the food industry but also in other sectors such as cotton production and the luxury perfume market. *The Business of Bees* also includes a framework for incorporating bee decline and initiatives to protect and enhance bee populations within responsible investment, from a practitioner’s perspective.[[10]](#footnote-10)

Royal Bengal tigers

Mangrove

Power plant Rampal Sundarbans

India financing project in Bangladesh

***Material Financial Risk through the Interconnectedness of Species: Durian and Fruit Bats***

An exotic fruit, the durian, provides a salient example of potential loss of value arising from species loss as well as of the critical balance of interrelationships that necessitate the healthy functioning of ecosystems and the provision of ecosystem services. The fruit is farmed primarily in Indonesia, Thailand and Malaysia. An article published in Geographical online in April this year highlights some imminent problems facing durian farming which have the potential to impact on business, investors and consumers, as well as the broader Malaysian society.[[11]](#footnote-11) The Guardian in December last year featured an article about how the durian, a ‘foul smelling fruit’ could make millions for Malaysia.[[12]](#footnote-12) China is the world’s largest importer of durian with imports of around 292 million kgs in 2016 and a share of up to 80% of global imports, with an anticipated growth of up to 15% in future years. Total trade in durian is expected to reach 4.5 billion kgs by 2030 (currently total trade is around 1.6 billion kgs). Global durian consumption has recently been valued at $14 billion annually, and it is growing rapidly. There is also a substantial tourist industry that has built up around durian, for people wishing to visit the plantations.[[13]](#footnote-13) However, another Guardian article raised concerns about how the increasing demand from China is leading to a surge in large-scale durian farming involving destruction of habitat that is home to the critically endangered Malayan tiger.[[14]](#footnote-14) The IUCN Red List website states that the estimated nationwide population has continued to decline from roughly 3,000 in the 1950s, to 500 between 1990 and 2003 to an estimate of between 80 and 120 mature tigers today.[[15]](#footnote-15) However, the rush to develop more and more durian plantations is not only threatening endangered jungle species such as tigers, elephants, monkeys and birds, but is also leading to decline in fruit bats (flying foxes) and other critically important pollinator species. Indeed, the future survival of the durian tree is considered to be threatened by the decline in flying foxes.[[16]](#footnote-16) A recent scientific study provided evidence that giant fruit bats (flying foxes) are very active and effective in pollinating durian trees. Until this study was published it was commonly thought that these huge bats were destructive and only the smaller, nectar-feeding bats were key pollinators. They are already classified as endangered on Malaysia’s Red List and are threatened by deforestation and habitat loss, as well as by hunting as bushmeat and killed as potential pests rather than seen as helpful pollinators. This research highlights the critical nature of interrelationships between species of flora and fauna, habitat and human-focused ecosystem services,[[17]](#footnote-17) *“Given the potential importance of flying foxes in ensuring the continued reproductive success of durian trees, the economic implications for the durian fruit industry should not be ignored. The conservation value of such an economic role is obvious. It is particularly significant given that some commercial durian farmers, such as in southern Thailand, have resorted to artificial cross-pollination by hand in the absence of natural pollinators - a laborious, time-consuming, costly, and dangerous method”* (Aziz et al., 2017, p.8682). Is it realistic to see human pollination as an alternative to natural pollination by fruit bats?

A recent market report on Durian concludes that, *“The obstacle facing Musang King [the largest and most popular durian strain] will not be one of demand as its demand is evident. Instead it will be on finding the correct balance between supply and price in order to optimise the fruits profitability”.* Clearly, this financial and economic assessment fails to acknowledge risks to durian production arising from key pollinator loss due to continuous increasing habitat destruction. This is a material financial risk to the business arising from species decline and potential extinction that should be incorporated into any business model. An approach to fruit production that fails to incorporate these ecological risks ensures only a short-term and unsustainable profitability that will result over the medium to long term in a collapse in the business with no fruit and no forest. The report indicates that profits from durian are expected to outstrip those from palm oil production – and look what that has done to orang-utan. They are on the very brink of extinction. In summary, for any financial institution involved in financing durian farming, development of plantations and any investor considering investing in durian agricultural companies that appear to have an extremely promising future of financial growth, these ecological risks arising from species interrelationships and decline in pollinators should be core to financial decision-making. From a purely financial and business perspective, it is critically important to invest in conservation and protection of key pollinator species such as flying foxes. From a deep ecology perspective these creatures are beautiful, charismatic species with intrinsic value and are surely worth saving from extinction.

***Species Extinction, Species Interrelationships and Material Financial Risk***

There have been numerous attempts to estimate the value of ecosystem services which include provisioning services, regulatory services, supporting services and cultural services. Ecosystem services worldwide were estimated to be annually worth *$33 trillion*,[[18]](#footnote-18) almost twice the global GNP at an estimated *$18 trillion.* Such ‘valuing’ of global ecosystem services is clearly immensely complicated and can at best only result in a very rough estimate. Research concludes that changes in global land use between 1997 and 2011 have resulted in a loss of ecosystem services of between *$4.3 and $20.2 trillion* per year.[[19]](#footnote-19) The authors further estimated total global ecosystem services in 2011 to be *$125 trillion per year* or *$145 trillion per year*, using slightly different measures. These figures are alarming yet the paper stresses that the estimates are conservative. It is not the size of the estimates that matters rather the magnitude and enormity of our reliance, as a species, on all other species and their interdependence.

As we cannot understand the contribution of each endangered species to the functioning of the ecosystem as a whole, as seen from discussion of the scientific literature above, the loss of one species could be represented by a *pro rata* proportion of $145 trillion dollars a year, or could equal a substantial amount, if not all, of $145 trillion, if it is found to be a keynote species.[[20]](#footnote-20)

The new report by the IPBES provides (with varying levels of certainty according to probability estimates) a range of the latest information relating to species decline and the impact of extinction threat on human life, in their new report. An average of around *25%* of species across the many terrestrial, freshwater and marine vertebrate, invertebrate and plant groups are now considered to be threatened with extinction and the threat of extinction is accelerating. More than 40 per cent of amphibian species, almost a third of reef-forming corals, sharks and shark relatives and over a third of marine mammals are currently threatened. The proportion of insect species threatened with extinction is a key uncertainty, but available evidence supports a tentative estimate of 10 per cent. Overall, it is estimated that of an estimated 8 million animal and plant species (75% of which are insects), around 1 million are threatened with extinction. The report also states that around 9 per cent of the world’s estimated 5.9 million terrestrial species – more than 500,000 species – have insufficient habitat for long-term survival, are committed to extinction, many within decades, unless their habitats are restored.

Meat from wild animals forms a critical contribution to food sources and livelihoods in many countries with high levels of poverty and food insecurity - monkeys, tapirs, antelopes, pigs, pheasants, turtles and snakes. Not only are wild flora and fauna at risk but also farmed and domestic species are threatened due to reducing gene pools. An increasing proportion of marine fish stocks are overfished (33 per cent in 2015), including economically important species, while 60 per cent are maximally sustainably fished and only 7 per cent are underfished. Approximately 100 million metric tons of aquatic organisms, including fish, molluscs and crustaceans are taken from the wild every year and represent a vital contribution to world food security.

Tourism and specifically ecotourism also represent significant and substantial contributions to economies often in developing countries. Ecotourism is likely to be under threat from species extinction: who would visit the Kruger Park in South Africa were the Big Five to disappear? Human health is also under threat from plant species decline. An estimated 50,000-70,000 plant species are used in traditional and modern medicine worldwide.

The value creation process should take cognisance of interconnection between different types of capital (including: financial, manufactured, intellectual, environmental, human and social and relationship capital) in the context of the entity’s strategy, risks and operating model.[[21]](#footnote-21) In theory, this integrated thinking framework should be well suited for framing how biodiversity should be understood and reported on by organisations. However, the equal treatment of the six capitals could be called into question when we consider that ‘natural’ capital represents life on earth and the ecosystem, without which the other five are rendered meaningless.

Current treatments of extinction within reporting frameworks and the GRI Principles go some way towards dealing with biodiversity loss and species loss. However, they are not generally emancipatory, or transformational. They could result solely in a ‘fossil record’ of species, merely reporting on species extinctions in habitats under the control of organisations on an annual basis. Indeed, the majority of ‘extinction accounts’ have been found to be descriptive with little or no emancipatory elements.[[22]](#footnote-22) We therefore propose a disclosure/reporting framework that seeks to incorporate species protection and extinction prevention in a more emancipatory manner.

**The Extinction Accounting Framework for Disclosure on Species Protection and Extinction Prevention**

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| Stages |
| **1** | Record a list of plant and animal species, identified as endangered by the IUCN Red List, whose habitats are affected by the company’s activitiesReport where, geographically, the company’s activities pose a threat to endangered plant and animal species, as identified by the IUCN Red List and assess habitat statusReport potential risks/impacts on these specific species arising from the company’s operations (equivalent to the existing GRI principles to this point)Incorporate images (photos or drawings, for example) of threatened species which are affected by the company’s operations and which the company needs to protect and explain how these have been integrated into the company’s internal control system, business model, business strategy and operational plansReport full details (narrative as well as financial figures) relating to any fines or ongoing claims relating to endangered species legislation including the names of species and a summary of losses suffered with causes identifiedReport corporate expressions of moral, ethical and/or emotional motivations for preserving species and preventing extinction with a consideration of ecosystem level effects, including normative reflective self-accounts of the company’s impact on threatened and endangered species |
| **2** | Report actions/initiatives taken by the company to avoid harm to, and to prevent extinction of, endangered plant and animal species |
| **3** | Report partnerships between wildlife/nature/conservation organizations and the company which aim to address corporate impacts on endangered species and report the outcome/impact of engagement/partnerships on endangered species as well as the outcome of engagement with the responsible investment community (respecting investor confidentiality where appropriate) |
| **4**  | Report assessment and reflection on outcome/impact of engagement/partnerships and decisions taken about necessary changes to policy/initiatives going forward |
| **5** | Report regular assessments (audit) of species populations in areas affected by corporate operations |
| **6** | Report assessment of whether or not corporate initiatives/actions are assisting in prevention of species extinction |
| **7** | Report strategy for the future development and improvement of actions/initiatives: an iterative processEnsure that the whole process of ‘extinction accounting’ is integrated into corporate strategy and is incorporated into the company’s integrated report, not resigned to separate sustainability reports or websites, including species specific information.Report potential liabilities relating to future possible legal fines/claims relating to endangered species impacts.Include a discussion of ways in which the company is working to prevent future liabilities related to harming endangered species.Provide pictorial representation of success in conservation |

This may be summarised in diagrammatic form as follows

The potential for accounting to be emancipatory and to drive positive change is always there, as, *“… an appreciation of accounting’s emancipatory possibilities implies seeing accounting as at least potentially aiding (and being integral to) or giving further help to an emancipatory project. Critical researchers thus envisage accounting as functioning to help overcome repressive obstacles so that a better state is realised …A vision of accounting as an emancipatory force is consistent with seeing accounting as a communicative social practice that functions as a system of informing that renders transparent and enlightens with the effect of social betterment*”.[[23]](#footnote-23)

The emancipatory nature of this framework cannot be over-emphasised. Environmental, ecological or biodiversity reporting that simply underlines the status quo, and ensures business as usual is quite literally a waste of time in a situation of urgency given the rate and speed of species loss. Many studies have concluded that accounting for biodiversity in its current forms is driven by PR motives, by impression management inclinations and not by desire for change. Any attempt to implement extinction accounting needs to be transformative and progressive, as, *“…. unless extinction accounting is emancipatory, or at least progressive in nature, extinctions will not be prevented at either population or species level and all of the worst predictions about the future of the planet will be borne out. In other words, by prioritising an emancipatory extinction accounting, businesses will transform their ethos, activities and business strategy to slow and stop extinction trends*”.[[24]](#footnote-24)

***Illustrations of Emancipatory Extinction Accounting in Practice***

Interestingly, from our research, the finance industry in South Africa are extremely involved in extinction prevention. This can often be linked to the views and emotional relationship of senior directors within boards and their appreciation of and closeness to South African species in national parks. In a paper entitled, *“From the Big Five to the Big Four*”,[[25]](#footnote-25) we analysed an extensive sample of corporate reports in relation to rhinoceros under extinction threat. We found many cases of ‘rhinoceros accounting’, with some examples of ‘extinction accounting’ that seemed to demonstrate an emancipatory element. For example, Investec Ltd. stated in their 2013 integrated report that they partnered with scientific experts to launch Investec Rhino Lifeline. The stated aim of this initiative was to raise awareness of the rhinoceros crisis and respond through education, rescue and prevention initiatives. Specifically, Investec emphasise that this partnership is motivated by recognition of the *“… intensity of the rhino issue in Southern Africa”.[[26]](#footnote-26)* Further, Investec stated that they were, *“… proud to be associated with a number of non-profit organisations that are working hard toward creating a sustainable future and preserving the future security of the world’s rich cultural and national heritage”[[27]](#footnote-27)*  and that, *“Given Investec’s African roots, we are passionate about ensuring the continued existence of a number of African species. We, therefore, fund three biodiversity projects which are focused around rhinos, wild dogs and the impact of renewable energy on local birdlife. These initiatives allow Investec to give back to the environment and help ensure the sustainable existence of South African wildlife”*.[[28]](#footnote-28) Also, in the Sustainability Report, Investec stated that, *“South Africa loses rhinos on a daily basis. The rhino crisis has become the most significant conservation issue faced by the country. Poaching attacks represent lawlessness, a lack of political will, human greed, and a disregard for the wellbeing of animals in spite of the most dramatic public response in our conservation history”*.[[29]](#footnote-29) This seems to go far further than impression management or reputation-building type disclosures. The above extract displays a genuine desire to contribute to avoiding rhinoceros extinction and to enhance South Africa’s wildlife due to a love for the country’s heritage. In the authors’ views, the comments are too passionate to be motivated purely by impression management. This disclosure also seems to portray a corporate form of accounting which adopts a moral high ground and takes a purely ethical stance. The ‘reality’ being constructed and communicated through this corporate reporting is one which appears to hold rhinoceros protection and extinction prevention at a premium. The corporate website states that, *“South Africa is losing rhinos daily, through poaching. It is the most significant conservation issue faced by the country and time is running out. In 2012 Investec established Investec Rhino Lifeline to respond to this crisis … By working closely with our trusted partners and supporters, and by taking a hands-on approach, we believe that we can make a difference in saving the rhino and ensuring its long-term survival.”*[[30]](#footnote-30)This does not seem to coincide with public relations-driven disclosure aimed at building corporate reputation and managing impressions. Rather it appears to be a form of accounting driven by the realisation of imminent extinction of a species. Again, there is impassioned language used in this ‘extinction accounting’. For example, *“Rhinos are at the centre of a violent, well-organised series of poaching attacks in South Africa due to rampant trade in rhino horn”.* This depicts a form of corporate reporting which is characterised by sincere, emotional, rhetoric, which is quite the opposite of traditional accounting rhetoric based on calculative rationalities. An example of what we felt was emancipatory extinction accounting for rhinoceros is embedded here, *“Realising the need for greater support on the prevention side, Investec partnered with Wilderness Foundation in their Vietnamese demand reduction campaign which started in April 2014 when they hosted two Vietnamese pop stars in South Africa on a rhino experience. Through their extensive influence in the media, they are educating and raising awareness about the properties of rhino horn as well as the impact on rhino populations in Vietnam, the biggest market for rhino horn”*.[[31]](#footnote-31) This represents an emancipatory extinction accounting as it provides evidence of an innovative means of strangling the demand for horns using Vietnamese social icons who may be able to reach a large part of the population and change minds and hearts. This, for us, represents an attempt at providing disclosures which seek to transform and change behaviours and an illustration of pragmatic emancipatory accounting

Tentative extinction accounting frameworks for a wide variety of species and sectors have now been developed by academics, through stakeholder consultation, interviews with businesses and conservation organisations and discussion with practitioners. These include frameworks for panda,[[32]](#footnote-32) and hedgehogs. [[33]](#footnote-33) *Around the World in 80 Species* also explores accounting for polar bears by Russian oil companies, accounting for extinction by European zoos, accounting for belugas by aquaria, and extinction accounting by the South African National Parks.

***Incorporating Extinction Accounting into Reporting Frameworks***

One way of operationalising an emancipatory extinction accounting framework is to incorporate it into integrated reporting or into other reporting and disclosure frameworks (IFRS included) as a necessary core element. Further the relatively recent creation of the United Nation’s Sustainable Development Goals, the SDGs provides another means of pushing for species protection at all levels: governmental, regional, national, international. Extinction accounting can also be incorporated into integrated reporting and other reporting frameworks specifically via the two SDGs, 14 and 15, namely: “Conserve and sustainably use the oceans, seas and marine resources for sustainable development” (life in water) and “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation” (life on land). The following mapping shows how the SDGs can be ‘mapped’ on the three pillars of integrated reporting.[[34]](#footnote-34)

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| ***Mapping SDGs onto Economic Factors disclosed in Integrated Reports*****Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all****Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation****Goal 12. Ensure sustainable consumption and production patterns*****Mapping SDGs onto Social Factors disclosed in Integrated Reports*****Goal 1. End poverty in all its forms everywhere** **Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture** **Goal 3. Ensure healthy lives and promote well-being for all at all ages** **Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all** **Goal 5. Achieve gender equality and empower all women and girls** **Goal 6. Ensure availability and sustainable management of water and sanitation for all** **Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all****Goal 10. Reduce inequality within and among countries** **Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable****Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels** **Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development*****Mapping SDGs onto Environmental Factors disclosed in Integrated Reporting*****Goal 13. Take urgent action to combat climate change and its impacts****Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development** **Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**  |

The following diagram illustrates how collaboration between a wide array of frameworks across accounting and finance could protect species, prevent extinctions and ‘save the planet’.

**How Integrated Reporting Can Save the Planet: Integrated Reporting as a Vehicle for Reporting on Sustainable Development Goals, the Natural Capital Protocol, the Global Reporting Initiative, the Aichi Targets and Extinction Accounting[[35]](#footnote-35)**

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| --- | --- | --- | --- | --- | --- |
| The Natural Capital Coalition Natural Capital Protocol (NCP) |  |  |  |  | International Standards on Accounting and Reporting (ISAR)IFRS |
| 🡻 |  |  | Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) May 2019 report |  | 🡻 |
| 6 capitals |  |  |  |  | Sustainable Development Goals(SDGs) |
|  | 🡾 |  | 🡻 | 🡿 | 🡻 |
| The EU Sustainable Finance Action Plan | 🡺 |  | **INTEGRATED REPORTING****arising from integrated thinking****SASB** | 🡸 | SDG clustering under economic, social and environmental issues |
|  | 🡽 |  | 🡹 | 🡼 |  |
| Extinction accounting |  |  | Aichi Targets |  | Global Reporting Initiative Principles(GRI) |
|  |  |  | 🡹 |  |  |
|  |  |  | United Nation’s Convention on Biological Diversity (UNCBD)What about UN Global Compact Principles 7-9 |  |  |

If we then turn to the role of institutional investors in enhancing governance and accountability, then responsible investor activism can also contribute to species protection and extinction prevention. The following framework for extinction engagement that is emancipatory between responsible investors, companies, and other actors in the financial markets presents one way forward.

**A Framework for Responsible Corporate, Investor and Capital Markets Emancipatory Engagement on Extinction Prevention[[36]](#footnote-36)**

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| * How do you inform yourselves about species decline and extinction threats in relation to your business (strategy, operations, transactions), investment or capital markets activities?
* In what ways is your supply/value chain, both upstream and downstream, likely to be affected by species loss?
* Have you commissioned any studies to determine which species threatened with extinction on the IUCN Red List are directly or indirectly affected by your operations, or those of organizations within your supply/value chain?
* If you have commissioned studies, what were the outcomes? Have you identified which species are most at risk and what the financial (and other: reputational, social responsibility, ethical, moral) consequences of decline and extinction of these species are for your organization or investment-decision making?
* Are you engaging, or partnering, with any wildlife organization or industry association regarding species threatened with extinction, for example the WWF? If so what are the targets and outcomes of these engagements/partnerships?
* Are you engaging with service provides (rating houses/stock exchanges) and intermediaries (investment consultants) on species protection issues?
* Are you engaging with reference benchmarks (e.g.WBA), investable index (e.g.MSCI, FTSE, S&P, Nasdaq) and passive product providers (e.g.ETF managers) on species protection issues?
* What contingency measures, risk scenarios, mitigation and adaptation strategies have you considered regarding species decline and extinction?
* What measures are you taking to reduce and limit the impact of your operations or investments on the ecosystem?
* What initiatives, policies and strategies have you implemented in order to prevent species extinction?
* Have you assessed the impact of these initiatives, policies and strategies on species populations?
* Have your assessments led to alterations and improvements in your policies and strategies and initiatives / transactions?
* If they have, in what ways has your extinction prevention strategy altered?
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***Species Protection Action Plan***

Considering extinction accounting and extinction engagement represents two steps towards integrating species protection into the financial markets. The aim of this event hosted by Investec on 30th May 2019 is to explore how these two frameworks may be implemented into practice. Further the aim is to consider ways of incorporating species protection and extinction prevention into other mechanisms of the financial markets such that species protection becomes embedded in the heart of our global financial system. We need to explore ways of bringing species protection into the banking sector, into stock indexes, into corporate ratings, into financial analysis. This leads us to offer a ***Species Protection Action Plan*** (see Plan attached) for the financial markets that may act as the basis for discussion, for innovation, for the design of new techniques, tools and methods for species protection throughout the value creation chain. These innovative tools and techniques require imagination, ‘thinking outside the box’, ‘blue sky thinking’ perhaps. At this urgent point in human history where the extinction crisis is at a critical stage, we cannot rely on existing approaches. Never have imagination and innovative thinking been more necessary and urgent. The development of such mechanisms, tools and techniques across the financial markets and throughout business value chains lead us to an extinction governance model that embeds species protection into the heart of capitalism.

**Extinction Governance Model**

***Concluding Comments***

It is the intention of this workshop to explore how we can operationalise other mechanisms, capital market instruments, and other financial mechanisms to address species loss. In so doing the financial system can be geared to protect natural capital that is so critical to our planet as a going concern, to our future survival and from a sustainability perspective, for future generations. The UN SDGs are entirely consistent with this approach and our aim is to ensure technical pathways to protect and enhance life on land and life in water. Reducing the financial risk to businesses and potential financial losses arising from species extinction is, from a purely financial rent seeking motive, a core argument for our approach. Happily, this motivation walks hand in hand with ethical and deep ecology desires to preserve species for their individual and intrinsic value. It is a classic ‘win-win’ scenario.  A deep ecology perspective on extinction and species often coincides with an anti-capitalist stance. We choose to take a more constructive approach which attempts to work *within* our global system of financial markets and business. Our approach involves exploring ways in which species protection and extinction prevention can and must be integrated into every mechanism of business, investing, finance, accounting and services. This represents an extinction governance - a conceptualisation of governance across all countries, all sectors, all segments (retail and institutional) and all financial markets that places preservation of the natural world at the heart and develops mechanisms both simple and complex to ensure the continuation of life on earth and humanity.

As a detailed and urgent response to the recent IPBES report, that represents a call for action, this paper is timely and calls for efforts to develop innovative and imaginative solutions within the financial sector specifically, connecting to broader governance frameworks, which in an increasingly interdisciplinary and inter-sectoral environment can assist in protecting species from extinction. A summary of part 40 of the IPBES report is provided below, where reference is made specifically to those areas addressed in this paper.

**Summarised elements from IPBES parag.40:** Decision makers have a range of options and tools for improving the sustainability of economic and financial systems. Achieving a sustainable economy involves making fundamental reforms to economic and financial systems and tackling poverty and inequality as vital parts of sustainability. Trade agreements and derivatives markets could be reformed to promote equity and prevent deterioration of nature, although there are uncertainties associated with implementation. Alternative models and measures of economic welfare (such as inclusive wealth accounting, natural capital accounting and degrowth models) are increasingly considered as possible approaches to balancing economic growth and conservation of nature and its contributions and recognizing trade-offs, value pluralism and long-term goals. Structural changes to economies are also key to shifting action over long time scales, including technological and social innovation regimes and investment frameworks that internalize environmental impacts such as externalities of economic activities, including by addressing environmental impacts in socially just and appropriate ways. Although market-based policy instruments such as payments for ecosystem services, voluntary certification and biodiversity offsetting have increased in use, their effectiveness is mixed, and they are often contested; thus, they should be designed and applied carefully to avoid perverse effects in context. The widespread internalization of environmental impacts, including externalities associated with long-distance trade, is considered both an outcome and a constituent of global and national sustainable economies.

Any hopes of success in preventing further extinctions requires an interdisciplinary, inter-sectoral and intergovernmental approach. Saving species from extinction is not the remit of one group, such as Government, but is a responsibility to be borne by every member of society at every level including governmental, financial, corporate, community and individual.

As a final reflection I feel it is worth considering the IPBES definition for *“Nature’s contributions to people”,* namely that this refers to *“… all the benefits that humanity obtains from nature. Ecosystem goods and services, considered separately or in bundles, are included in this category. Within other knowledge systems, nature’s gifts and similar concepts refer to the benefits of nature from which people derive a good quality of life”*. This anthropogenic approach to nature is the one upon which our Species Protection Action Plan, and arguments around financial materiality associated with species loss, are essentially built. However, it is important to remember that humans are also a species and as such are part of nature. As a species we are as reliant on the rest of nature as any other species. Appreciating this basic fact allows us to adopt a more inclusive approach to extinction governance, one which allows an ecological governance to evolve.

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**SPECIES PROTECTION ACTION PLAN**FOR THE FINANCIAL MARKETS

**Why Extinction represents a Material Financial Risk for a Sustainable Finance Sector**

Our world is in the grip of a mass extinction crisis with extinction of flora and fauna caused by a variety of factors arising from industrial activity and increasing human populations, including global warming, climate change, habitat loss, pollution and use of pesticides. Most extinctions are linked to industrial and business activity either directly or indirectly. Business, society and the financial markets rely on the healthy functioning of the ecosystem. Each and every species has a unique role to play in our ecosystem. Through the interconnectedness of all life on earth, every extinction diminishes and weakens these relationships. This **Species Protection Action Plan** aims to form the basis for development of tools, techniques, models and other initiatives to protect and enhance value, mitigate material financial risks from species loss and extinctions, and save the Planet – and ourselves.

**WHY DOES EXTINCTION MATTER TO THE CORPORATE SECTOR?**

Species extinction can impact value creation and threaten supply chains, production and profits

**WHAT SHOULD COMPANIES DO?**

Implement emancipatory extinction accounting, incorporating species protection into integrated reports

Explore and identify means of assuring/verifying extinction accounting to provide confidence

Incorporate species extinction risk through risk management, internal control systems and internal audit

Develop KPIs to measure success/failure in species protection and extinction prevention

**WHY DOES EXTINCTION MATTER TO BANKING?**

Species loss and extinctions affect company value and corporate clients could suffer losses, default on loans. There are also potential markets and untested clients relating to species protection

**WHAT SHOULD BANKS DO?**

Including species protection in substantial lending decisions (incorporate into Equator Principles)

Incorporate species protection into green and blue bonds

Develop innovative bonds such as ‘insect apocalypse bonds’, ‘bee bonds’, ‘chocolate protection bonds’

Innovate with personal accounts/personal credit cards that contribute to species protection

**WHY DOES EXTINCTION MATTER TO INSTITUTIONAL INVESTORS?**

Corporate value affected by species extinction represents a material financial risk for the investment industry

**WHAT SHOULD INSTITUTIONAL INVESTORS DO?**

Practise extinction engagement and engage with investee companies on species protection

**WHY DOES EXTINCTION MATTER TO PENSION FUND TRUSTEES AND FUND MANAGERS?**

Risk to investment return and pension fund value from species extinction

**WHAT SHOULD TRUSTEES AND FUND MANAGERS DO?**

Include species protection on agendas for trustee meetings and in fund managers’ mandates so they practise emancipatory extinction engagement and communicate with pension fund members on relevance of species protection to the fund and future benefits

**WHY DOES EXTINCTION MATTER TO ANALYSTS?**

Corporate value is affected by the way companies protect species through their value chain

**WHAT SHOULD ANALYSTS DO?**

Integrate corporate performance in preventing extinctions and protecting species into financial analysis

**WHY DOES EXTINCTION MATTER TO STOCK INDEXES?**

Species loss and extinction affect company value that is reflected through indexes

**WHAT SHOULD STOCK INDEXES INCLUDE?**

Incorporate species protection into the specific indexes such as the FTSE4Good

**WHY DOES EXTINCTION MATTER TO SUSTAINABILITY RATINGS?**

Species loss and extinction affects company value and therefore needs to be reflected in any sustainability ratings

**WHAT SUSTAINABILITY RATINGS NEED TO INCLUDE**

Incorporate species protection as a primary factor in any ratings model relating to sustainability

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3. Ceballos et al., 2017, p.6095 [↑](#footnote-ref-3)
4. Maroun and Atkins, 2018 [↑](#footnote-ref-4)
5. The IPBES is the intergovernmental body which assesses the state of biodiversity and of the ecosystem services it provides to society, in response to requests from decision makers. [↑](#footnote-ref-5)
6. IPBES Report, Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, May 2019. [↑](#footnote-ref-6)
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19. Constanza et al (2014); Constanza (2006) [↑](#footnote-ref-19)
20. This argument is taken from Atkins and Maroun (2018) [↑](#footnote-ref-20)
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25. See Atkins et al., 2018 [↑](#footnote-ref-25)
26. (Investec, Integrated Report, 2013, p.110). [↑](#footnote-ref-26)
27. Investec, Integrated Report, 2013, p.110 [↑](#footnote-ref-27)
28. Investec Sustainability Report, 2013, p.25 [↑](#footnote-ref-28)
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30. This is from the company website; https://www.investec.co.za/about-investec/sustainability/planet/investec-rhino-lifeline.html. [↑](#footnote-ref-30)
31. Investec, Sustainability Report, 2015 [↑](#footnote-ref-31)
32. This framework was developed by Longxiang Zhao for his doctoral thesis and is published in *Around the World in 80 Species*, chapter 19. [↑](#footnote-ref-32)
33. A framework for companies in the agro-chemical industry to report on hedgehogs (or absence of hedgehogs) is being developed by Mira Lieberman for her doctoral research. [↑](#footnote-ref-33)
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36. An earlier version of this framework was published in Atkins and Maroun (2018) page 773. [↑](#footnote-ref-36)