Debunking Sustainable Use Report 2020

Investigating the sustainable use model in relation to the legal trade in endangered wildlife

NATURE NEEDS MORE

Table of Contents

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Nature Needs More works on tackling the key systemic enablers of the illegal wildlife trade, including unconstrained consumer demand for wildlife products and the significant deficiencies in the legal trade system under CITES. To stop the extinction crisis we need to form a new relationship with the natural world.

Foreword from the CEO

Excessive and unchecked consumption is accelerating biodiversity loss. It is reducing our ability to save wildlife and pristine environments; indeed, the planet as we know it. The growth in consumption oriented behaviour of wealthy societies has driven the world into what is now increasingly termed the Anthropocene epoch; a period in the history of the planet where human economic activity is the dominant influence on both the climate and global ecosystem.

In May 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services released the first-ever global assessment on the health of biodiversity and ecosystems, the most comprehensive report of its kind. The finding that up to one million species are now threatened with extinction should be alarming. Particularly as direct exploitation for trade was confirmed as the second biggest threat to species survival.

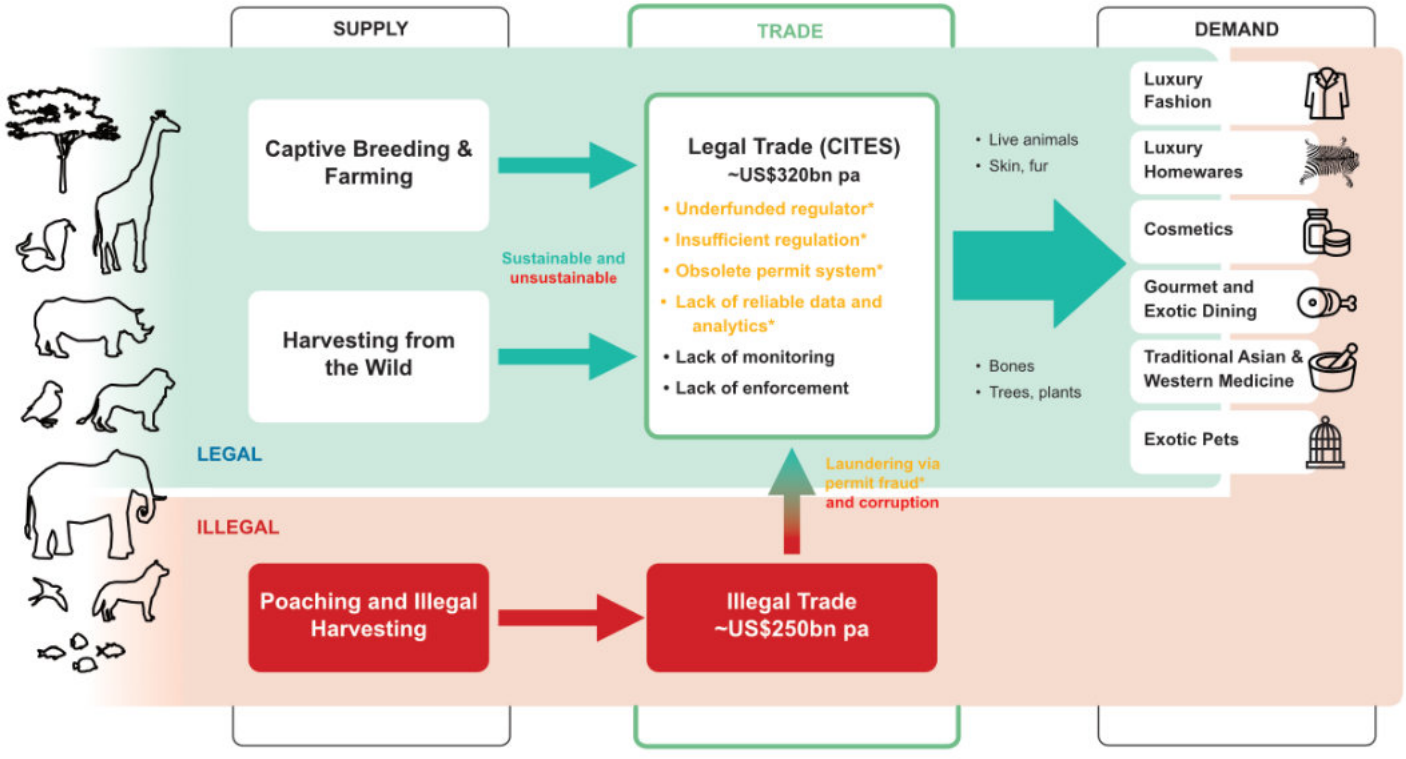
The coming decade is, in all likelihood, the only remaining timeframe to stem this biodiversity loss to any great degree. But since the trade in wildlife is one of the most lucrative trades in the world, those who benefit push relentlessly for maintaining the status quo and resist change.

There is a widespread belief in both conservation agencies and the wider public that 'sustainable use' of wildlife is both possible and desirable. This report examines the validity of both assumptions under the current economic framework and asks if there is any genuine 'proof' that the sustainable use model has or can work to protect endangered species.

Any of the stakeholders - business, government or conservation - who want the sustainable use model to remain must commit to validating it. Radical transparency is the first step, until trade is transparent there is no proof of sustainability; it remains an ideology based on magical thinking.

I would like to thank the lead author, Dr Peter Lanius of Nature Needs More, for his work in producing this report.

Dr Lynn Johnson, Founder & CEO



** Currently the legal and illegal trade are so intertwined that they are functionally inseparable. The only way to tackle the illegal trade is to modernise CITES which addresses all the items marked in amber.*

Section 1
Introduction

There is a widespread belief in both conservation agencies and the wider public that ‘sustainable use’ of wildlife is both possible and desirable. This report examines the validity of both assumptions under the current economic framework. We also question the ‘proof’ that is generally offered to make the case for sustainable use.

In order to examine the assumptions and arguments made for sustainable use of wildlife, we need to remove the rose-coloured glasses and look at the actual evidence in relation to the exploitation of wildlife. This means looking at aggregated data, not individual species. It also means examining the implementation of the ‘principles of sustainable use’, in particular in relation to the regulatory frameworks and treaties that are in place to protect biodiversity from overexploitation.

Whilst we acknowledge that in some countries there is substantial domestic use of wildlife, overall the direct exploitation of wild animals is dominated by fishing in international waters (‘introduction from the sea’) and the international trade.

With this in mind, we predominantly examine the issues in relation to the international trade and specifically the trade in endangered species, which is regulated by CITES (which also covers introduction from the sea). Unless separate agreements are in place, the trade in non-CITES listed species is completely unregulated and few attempts are made to determine ‘sustainability’.

This focus on CITES listed species does not diminish the validity of the arguments made in this report. CITES listed animals and plants are the species considered as most threatened from direct exploitation and trade. Given the essence of sustainability is the ability to preserve populations to serve the needs of future generations, focusing on the species most under threat is sufficient to make the overall case.

A caveat is that even when species have been listed on the IUCN Red List as endangered from trade, it takes years and sometimes decades to list them on the CITES appendices [1]. During this waiting period the trade remains unlimited and unmonitored. Yet with over 35,500 CITES listed species, the data set is large enough to draw broad conclusions.

The focus of this report is on sustainable use of wildlife, not plants or broader biodiversity, but similar arguments could be used. In addition, we only consider consumptive use, which we define as removing animals from their habitat or captive breeding for commercial purposes. Non-consumptive use (which includes tourism, for example) is not considered in this report.

The In-Principle Impossibility of Ecologically Sustainable Development

Ecologically sustainable development promises a win-win-win scenario between economic growth, ecological sustainability and social justice outcomes, yet it is mathematically impossible to maximise a function for all three variables at once[2]. In practice, there are only two possible options:

1. Maximise for one outcome at the expense of the other two (win-lose-lose), or
2. Optimise the overall outcomes by making trade-offs between the three

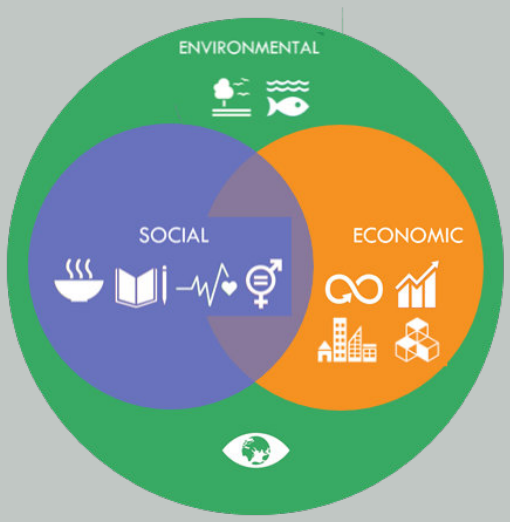
The real reason to pretend that the impossible is in fact possible AND desirable is to disguise reality by sticking to a powerful, convenient story that does not withstand scrutiny – hence scrutiny is discouraged and suppressed.

We have been conditioned over the last 250 years that economic development equals 'progress' and that economic growth can be limitless. Of course, the reality is that we cannot have unlimited growth on a limited planet. Since the first acknowledgement of those limits in the early 1970s [3] capitalism has been looking for a way to justify its continued existence – which requires unlimited growth.

The 'solution' is as elegant in language as it is ineffective in preventing disaster – exploit the human mind's fondness for wishful thinking over having to make hard choices. 'Ecologically sustainable development' was designed to obscure the fact that the reality is either win-lose-lose or requires hard trade-offs between all three [4].

How effective this strategy has been can be seen from the simple fact that nearly all nations are still pursuing economic growth above all else, inequality is rising, and biodiversity is in continued decline. Even though these are the clearly observable outcomes of pursuing 'ecologically sustainable development' for the last 28 years since the Rio Declaration, the win-win-win assumption has not been questioned in the mainstream. Questioning is dismissed as 'fringe' or 'activism', even if it is based on science. A recent analysis of the UN Sustainable Development Goals [5] found that "*the SDGs fail to monitor absolute trends in resource use and thus prioritize economic growth over ecological integrity*"

The image below left shows a typical representation of 'sustainable development'. All 3 dimensions are depicted as equal and the 'sustainable' part is just the small, overlapping area in the middle. This commonly used diagram implies the three dimensions are independent and can also grow independently. This representation is misleading. In reality the Economic and Social are subsets of Environmental, as shown on the right. No society or economy can exist outside environmental limits, so we should make that clear when talking about sustainable development or use.



'Ecologically Sustainable Use of Wildlife' is simply a sub-category of ecologically sustainable development, which equally contains all three 3 dimensions:

- 'Use' is a proxy for monetising wildlife and hence equates to economic growth
- 'Ecological sustainability' implies biodiversity conservation AND inter-generational justice because it is generally defined as "***meeting the needs of the present without compromising the ability of future generations to meet their own needs***" [6]
- In recent times another social justice component has been incorporated into the accepted 'benefits' of sustainable use - poverty alleviation (often termed alternative livelihoods)

As with sustainable development, the notion of sustainable use was designed to disguise the prioritisation of growth and unlimited exploitation over biodiversity preservation and social justice outcomes.

Section 2

Current Implementation Principles of Sustainable Use

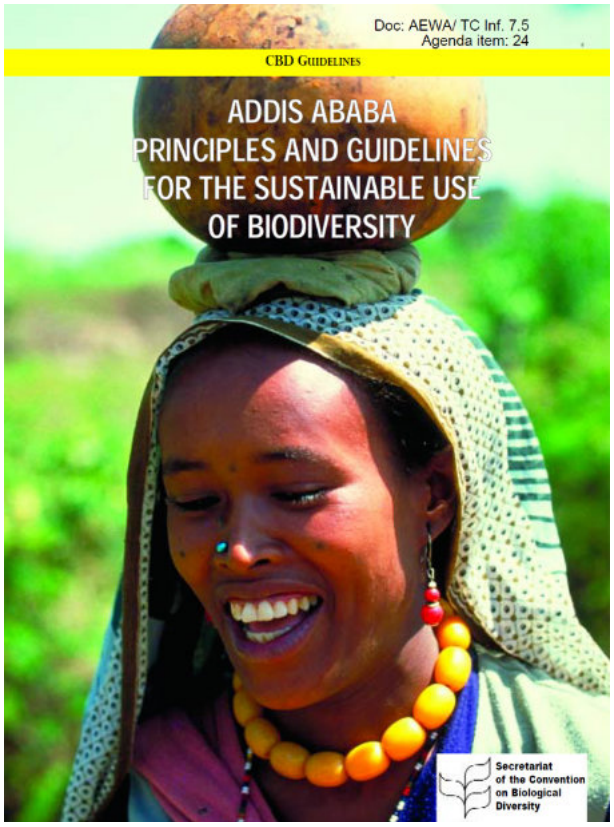
The Convention on Biological Diversity (CBD), which came into force in 1993 and today has 196 signatory countries, has 'sustainable use' of the components of biological diversity as one of the three objectives of the Convention.

In 2004 the Secretariat of the CBD, upon request of the signatory countries, developed practical principles and operational guidelines to advise parties in their efforts to achieve 'sustainable use'. These are known as the Addis Ababa Principles [7]:

"*The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity presented in this booklet are based on the assumption that it is indeed possible to use biodiversity in a manner in which ecological processes, species and genetic variability remain above the thresholds needed for long-term viability, and that therefore all resource managers and users have the responsibility to ensure that that use does not exceed these capacities.*"

So the basic assumption is that 'sustainable use' is possible from the perspective of ensuring long-term viability. To put it in the terms of the previous section, it is indeed possible to maximise the three dimensions for one of them – ecological sustainability. This is undoubtedly the case, if we are happy to either ignore or make trade-offs on the other two dimensions. Yet the Addis Ababa Principles state clearly that 'sustainable use' also includes social justice and economic development:

"*Sustainable use is a valuable tool to promote conservation of biological diversity, since in many instances it provides incentives for conservation and restoration because of the social, cultural and*



economic benefits that people derive from that use. … In this context, and as recognized in the Plan of Implementation of the World Summit on Sustainable Development, sustainable use is an effective tool to combat poverty, and, consequently, to achieve sustainable development."

And with that, we are back to wishful thinking. The proposed 'solution' to the inherent conflict of interest with economic development and social justice outcomes was already implied in the previous quote by saying "*that therefore all resource managers and users have the responsibility to ensure that that use does not exceed these capacities*" - stipulating that resource managers (e.g. landowners, businesses, local communities or government agencies) and consumers are responsible to achieve all 3 outcomes.

What is ignored is that these 'resource managers' and these 'users' do not exist in a vacuum. They are embedded in a larger legal, institutional and economic framework. For example, listed corporations are compelled by law to maximise profits in many countries. For them to accept the costs of sustainability, they need a law or regulation that compels them to do so.

Of the 14 Principles in the Addis Ababa document, only Principles 1 and 2 touch on the issue of conflicts of interest. The language of these are vague and misleading. For example in Principle 1: "*Supportive policies, laws, and institutions are in place at all levels of governance and there are effective linkages between these levels.*"

This sounds like policies, laws and institutions are to be supportive of sustainability, but in the Rationale for Principle 1 it says instead: "*There must be clear and effective linkages between different jurisdictional levels to enable a 'pathway' to be developed which allows timely and effective response to unsustainable use and allows sustainable use of a resource to proceed from collection or harvest through to final use without unnecessary impediment.*" Whilst the nature of the 'timely and effective response to unsustainable use' is left completely open, it is made quite clear that any 'impediment' to use has to be removed.

Principle 2 states that "*users of biodiversity components should be sufficiently empowered and supported by rights to be responsible and accountable for use of the resources concerned*".

The Rationale for Principle 2 then makes clear that "*Uncontrolled access to biodiversity components often leads to over-utilization… Therefore sustainability is generally enhanced if Governments recognize and respect the 'rights' or 'stewardship' authority, responsibility and accountability to the people who use and manage the resource, which may include indigenous and local communities, private landowners, conservation organizations and the business sector.*"

This is misleading – uncontrolled access is NOT the major cause of unsustainable use. The major causes of unsustainable use are habitat loss / destruction, agricultural practices and legal over-exploitation by businesses (see Page 7).

Conflating the incentives and interests of private landowners, local communities, conservation organisations and the business sector is of course doubly misleading – it sounds like because they are all 'resource managers' they are all equally interested in the sustainability of their use. **This is magical thinking with no bearing on the reality of financial capitalism.**

Section 3

Dimension 1 - Ecological Sustainability

In order to assess how ‘successful’ we have been in achieving the impossible win-win-win scenario implied by the pursuit of ‘ecologically sustainable use’, we need to examine a variety of evidence in relation to all 3 dimensions. We will start here with ‘ecological sustainability’ and the evidence we have for being able to ‘meet the needs of future generations’.

In order to do so, we will examine evidence at different levels – assessments of biodiversity over time, assessments for species that have been studied in detail and take a brief look at ‘captive breeding’, the get-out-of-jail-free card for anyone wishing to profit from commercialising wildlife.

Assessments of Biodiversity

Thanks to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as of May 2019 we now have the most comprehensive report on the status of biodiversity available [8]. Their Global Assessment Report was based on a systematic review of about 15,000 scientific and government resources and their summary was unequivocal:

"*Nature is declining globally at rates unprecedented in human history – and the rate of species extinction is accelerating*"

"*The Report finds that around 1 million animal and plant species are now threatened with extinction, many within decades.*"

The report shows alarming declines in biomass and species abundance – the global biomass of wild mammals has fallen by 82% and the overall abundance of naturally present terrestrial species has declined by 23%. Direct exploitation (which is another term for sustainable use) is the most important driver of decline and extinction risk for marine species and the second most important driver for terrestrial and freshwater species.

The breakdown of extinction risk shows that for animal species amphibians are most at risk, with sharks & rays, crustaceans, mammals and reptiles not far behind. The percentage of species threatened ranges from 25-40% for these species groups, posing a massive risk to ecosystems.

Although this Global Assessment Report only provides a snapshot as yet, it is by far the most comprehensive assessment of the state of biodiversity available and it makes a mockery of the idea that any of our current practices, including 'direct exploitation' or 'use', are indeed sustainable.

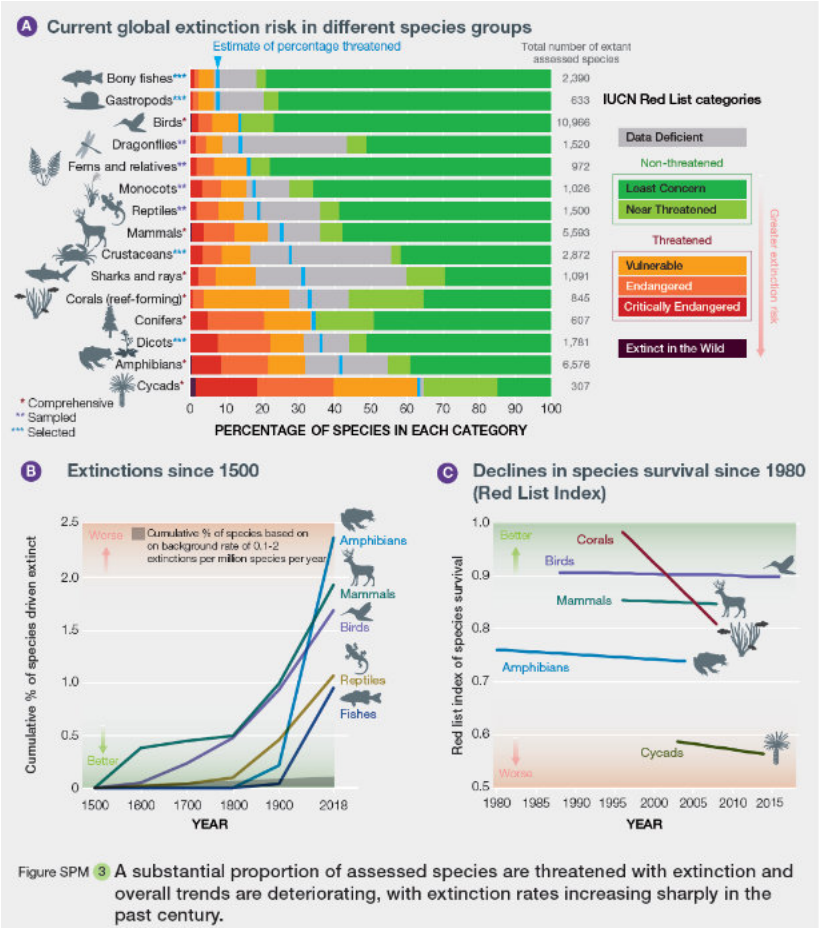


Figure SPM 3 A substantial proportion of assessed species are threatened with extinction and overall trends are deteriorating, with extinction rates increasing sharply in the past century.

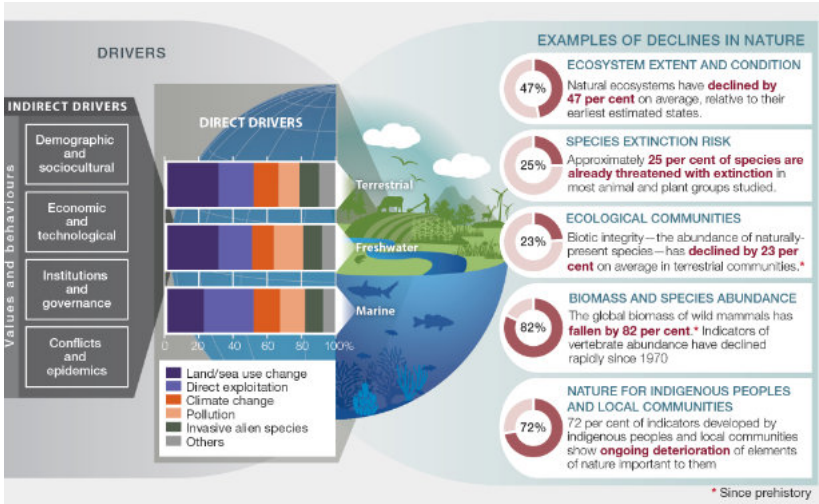


Figure SPM 2 Examples of global declines in nature, emphasizing declines in biodiversity, that have been and are being caused by direct and indirect drivers of change.

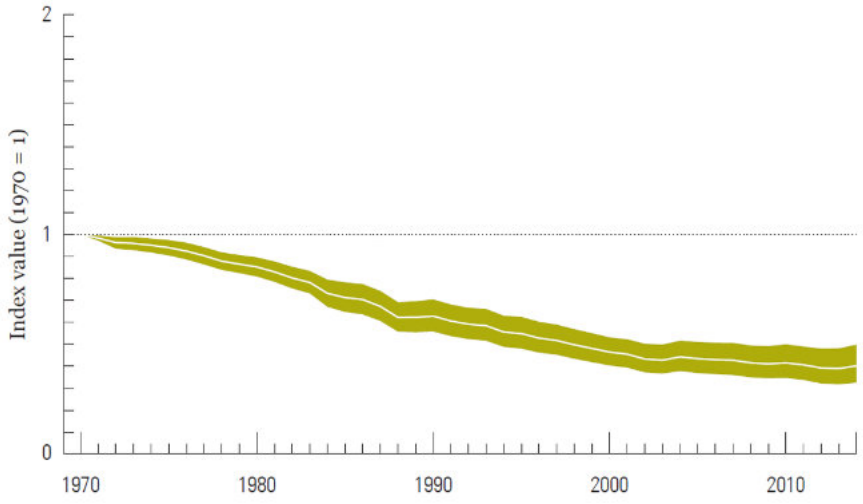


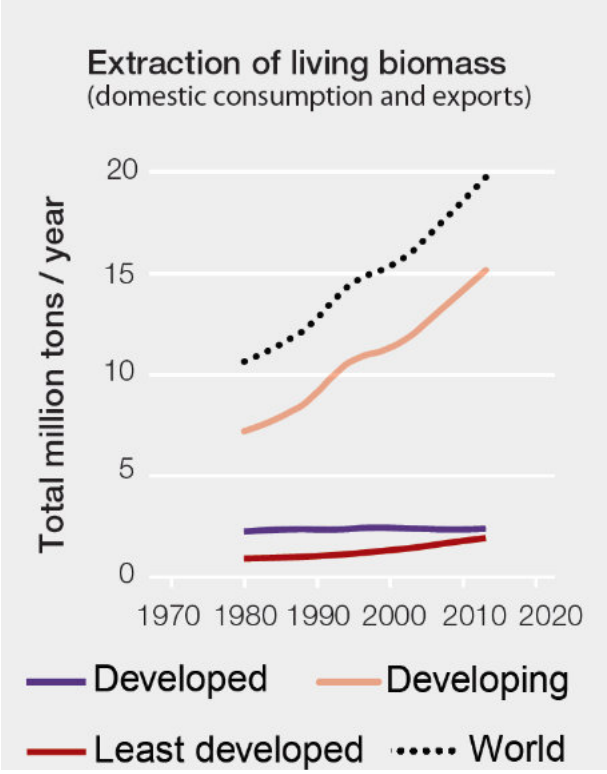
Figure 7: The Global Living Planet Index, 1970 to 2014
Average abundance of 16,704 populations representing 4,005 species monitored across the globe declined by 60%. The white line shows the index values and the shaded areas represent the statistical certainty surrounding the trend (range: -50% to -67%)[34].

To get an additional insight into our historic performance we need to turn to a long-running study of wildlife populations, which fortunately is available through the WWF Living Planet Report [9]. The report was first published in 1998 and includes historical population data going back to 1970. It monitors over 4,000 species of mammals, birds, fish, reptiles and amphibians in over 16,000 populations across the globe to derive an overall trend in population abundance over time – the Living Planet Index.

The picture above shows the alarming decline in this population index in the last 50 years. Again, it is clear from the historic trend and the observed decline of close to 60% in population abundance that our current practices are unsustainable.

Finally it is worth mentioning that according to the Ecological Footprint metric we are using way more of the renewable ecological assets than what is sustainable - we are using the equivalent of 1.75 Earths. This means it now takes the Earth one year and eight months to regenerate what we use in a year [10].

The fundamental conclusion does not change – 'sustainable use' is just a convenient story to keep us from questioning the reality of unsustainable over-exploitation of wildlife.



If the Rio Declaration and promoting 'sustainable development' really had made a difference, the extraction of living biomass as seen in the graph above would have slowed compared to GDP growth (see page 16) since 1992, but it hasn't.

Direct Exploitation and Lack of Trade Regulation

Direct exploitation (or 'use') of wildlife consists of domestic consumption and international trade. We focus our attention on the international trade, as domestic consumption patterns vary massively between countries – from small-scale, local, traditional use of bushmeat in parts of Africa to having 22,000 captive breeding facilities supplying domestic consumption in China [11].

The international trade in endangered species is regulated by CITES – the Convention on the International Trade in Endangered Wild Flora and Fauna, which came into effect in 1975 and today has 183 signatory parties [12]. It has long been considered an 'effective' treaty because it contains mechanisms to enact trade sanctions for signatory countries not complying with its provisions [13].

In reality CITES has some major flaws that prevent it from being truly effective in the protection of biodiversity from overexploitation through trade:

1. CITES is an 'old-style' UN Convention. It lacks a mechanism that would make it easy to amend it, such as the use of Protocols in more modern UN Conventions. The Articles of CITES have remained unchanged since 1975 apart from a single change in 1983.
2. CITES assumes the abundance of wild flora and fauna. The default for any species under CITES is unlimited global trade. Only once a signatory country deems that a species or population may be under threat from trade can it apply for an Appendix listing (see box on next page) under CITES to implement trade restrictions ("blacklisting"). This process typically takes 12 years and can take up to 24 years [14].
3. CITES could be powerful if it modernised and properly resourced. It regulates and manages a US$320billion global trade in 36,000 species yet has a core budget from signatory country contributions of only US$6.2million [15]. It has no mandate or capacity to demand or fund proper monitoring and enforcement of the trade restrictions it imposes.
4. CITES trade monitoring is hopelessly out of date. When it comes to issuing permits, trade monitoring and traceability of shipments, CITES is firmly stuck in the computer-less world of the 1970s. Most countries still use paper permits and report trade data (of appalling quality) only once a year. Apart from microchipped live animals and crocodile skins, no specimens can be traced from source to destination.
5. CITES is based almost exclusively on supply-side considerations. The role of demand in creating incentives to supply is not properly accounted for [16].
6. CITES works on flawed assumptions. It is based on the idea of 'national sovereignty' over biodiversity [17]. The concept of ecosystems was retrofitted into CITES processes to make up for the lack of systems approach under 'national sovereignty'. Yet when it comes to decision making, most countries will insist on 'national sovereignty' since it is written into the Preamble of the Convention.

The result is that CITES does not function as was originally intended – it cannot effectively protect vulnerable species from over-exploitation through trade and it has too many loopholes in its implementation that enable the massive illegal trade to thrive [18].

A single example will suffice to showcase the ineffectiveness and limits of CITES. The 8 species of pangolin are widely considered the 'most trafficked mammal on earth' [19]. All 8 species were listed on Appendix II by 1995, allowing legal commercial trade with monitoring. A zero export quota was established for the 4 Asian species of pangolin in 2000.

Despite allowing commercial trade under CITES, the trade in pangolins was mostly illegal and hence only a limited amount of trade data is available in the CITES trade database and that data is of questionable quality [20]. This includes commercial permits for the zero-quota Asian pangolins issued after 2000 and permits issued for 'captive bred' pangolins when there has been no evidence of successful captive breeding outside of zoos [20].

On the other hand, according to media reports, seized illegal shipments can contain tens of thousands of pangolins and tons of scales. This means the protection mechanism through Appendix II listings is useless if the illegal trade is allowed to persist unmonitored and unchecked. Because pangolins aren't 'iconic' or 'cute', they have not been studied extensively by biologists or ecologists, so even the baseline population data needed for informed decision making simply doesn't exist.

CITES 'uplisted' all 8 species of pangolin to Appendix I in 2016 (prohibiting legal commercial trade), an outcome widely celebrated as a 'conservation success' at the time. Yet the uplisting has no practical consequence – the illegal trade was already in place and continues unabated because of the lack of monitoring and enforcement.

CITES Appendix Listings

Because CITES takes the default position that flora and fauna is abundant, to protect a species from overexploitation it needs to be placed on the Appendices. CITES has three such appendices, represented by I, II and III.

Appendix I listed species cannot be traded commercially at all and require an export and import permit to be traded for non-commercial purposes. There are about 1,000 species listed on Appendix I.

Appendix II listed species require a Non-Detriment Finding (see box on next page) by the exporting country's Scientific Authority before export permits can be issued. The trade in the 34,500 species listed on Appendix II is recorded and monitored by CITES.

Appendix III contains restrictions on trade of populations issued by individual signatory countries.

Traditional anti-poaching measures don't work for solitary, nocturnal anteaters that can be picked up by hand and wildlife trafficking is still not included under the UN Convention Against Transnational Organised Crime, despite being the 4th-largest transnational crime in the world [21]. So the most trafficked mammal on the planet falls through the cracks and is likely headed for extinction given the surging demand for wild meat and pangolin scales in China and SE Asia.

Nature Needs More Ltd, 2020

Sustainability of CITES Regulated Trade

In order to understand what CITES is set up to achieve and how it falls down because of the flaws outlined earlier, we need to take a closer look at the basic workings of the convention. As previously stated we will focus on animals, which make up 16% of CITES listed species [22].

Because of the CITES principle of national sovereignty over biodiversity it is expected that the range country or countries that 'own' a species will apply for a listing on Appendix I or II (or at the very least support such a listing proposal). For example, CITES would expect Australia to apply for a listing of kangaroos. Other countries can try to pressure Australia to get kangaroos listed, but in all likelihood would not pursue a listing without Australia's support. In this way CITES sees kangaroos as Australia's 'possession', not an essential element of global biodiversity.

In extreme cases, where a species is distributed across many countries such as for elephants, this can lead to paralysing, endless wars over how it is listed on the appendices. This has been well documented in the case of African elephants, which are 'split-listed' – Southern African elephants are listed on Appendix II and the rest on Appendix I [23]. It should be self-evident that such a split listing is only meaningful if any specimen or derivative product (such as ivory and skin) can be reliably traced from source to destination, but that traceability is completely absent in CITES.

Because of the way it is set up, CITES plays no role in the monitoring and enforcement of its listing provisions beyond dictating the need for non-detriment findings (NDF - see box) and export permits for Appendix II listed species (App I species require export and import permits, but they cannot be commercially traded). All data collection and monitoring is up to signatory countries.

CITES reporting relies on permit data, which are deeply flawed because export and (when they exist) import records cannot be reconciled. On top of that most countries still issue paper permits, with massive opportunities for fraud making the legal and illegal trade functionally inseparable [24]. Finally, permit data only contain the intended quantity to ship, not the actual quantity. Very few countries collect and report the actual quantities being shipped.

What Are CITES Non-Detriment Findings?

According to the Convention, Parties shall allow trade in specimens of species included in Appendix II only if the Scientific Authority of the State of export has advised that "such export will not be detrimental to the survival of that species" (Article IV.2(a)). Referred to as "non-detriment findings" (NDFs), they are a guarantee that exports of products from listed species covered by the NDF have not harmed wild populations or ecosystems [25].

Because the Scientific Authority of each CITES Party is responsible for making NDFs and determining how to do so, CITES has not produced binding technical criteria for undertaking NDFs. Instead, non-binding general and species-specific guidance for making NDFs has been developed by individual Parties, the IUCN and expert panels.

The idea is that as a result of doing the NDF a management plan is developed that mitigates conservation concerns and the impacts and risks of harvest/poaching and trade. This requires a LOT of information gathering and considerable resources to implement and monitor compliance. This needs to be done for all 34,500 Appendix II listed species!

Because CITES is based on a blacklisiting model, sustainability of trade can only be achieved by:

1. Having reliable baseline population and trade data (for the legal AND illegal trade) and a clear understanding of the demand (current and future)

2. Having a true understanding of any non-trade related pressures on the population (habitat decline, climate change, disease, pesticides, decline in food sources etc.)
3. Understanding the state of health of the overall ecosystem the population resides in and any effect harvesting would have

Theoretically all this information feeds into the Non-Detriment Finding, but in practice the amount of data collection and management required is beyond the means of signatory parties and NGOs in most instances. In addition, because of a supply-side fixation, the demand for products and the ability to manufacture new demand through marketing tends to be ignored in CITES decisions.

The fundamental flaw of course is the fact that those who profit from the trade do not make any contribution to the cost of managing sustainability.

The token cost of CITES permits paid by business stands in no proportion to either the economic benefit or the costs of ensuring ecological sustainability. If the intention was to achieve true ecological sustainability, then those exploiting the resource would be asked to pay the full cost of 'use', which at a minimum includes monitoring, data collection, research, management, enforcement costs, CITES compliance and demand assessment.

If CITES was supposed to effectively monitor and enforce the ecological sustainability of trade in its listed species, one would also assume that for every listed species a report is prepared for each Conference of the Parties (the main decision making body of CITES which meets every 3 years). Such a report would check the continued validity of the baseline data, the assumptions in the original NDF, present legal and illegal trade data and their impact, analyse demand trends and provide an update on the population pressures. In addition, it would include a thorough analysis of the effectiveness of the management plan for the species.

Indeed, CITES has such mechanisms. For animals, the Animal Committee meets once a year for 3-4 days. Among many other things, it is tasked with undertaking periodic reviews of species and when certain species are subject to unsustainable trade it can recommend remedial action (through a process known as the 'Review of Significant Trade') [26].

Because of the lack of funding for both CITES and the national authorities, the actual number of such reviews is tiny compared to the 5,800 animal species that are listed. Between 2010 and 2016, of the 40 species selected for Review of Significant Trade over the same period, only about half have been completed (either by uplisting the species to Appendix I, implementation of the recommendations by the country or by downgrading the category of concern) [27].

The other 20 reviews are still ongoing, meaning the concerns persist and recommendations made to the country have not been fully implemented (be it through lack of funding or stalling tactics). At this rate the mechanism can never be effective given the number of species listed.

Captive Breeding / Farming / Ranching

Both the IUCN and CITES are big advocates of captive breeding (also called farming of wildlife) as a way to achieve 'sustainable use'. This goes beyond endangered species and encompasses a wide range of strictly for-profit businesses, for example:

- Farming of fish, crustaceans and mussels in the sea and aquaculture of fish, seahorses on land
- Captive breeding of minks, foxes etc. for the fur trade
- Ranching of pythons and crocodiles for exotic leather goods
- Farming of deer, ostriches and emus for meat consumption
- Captive breeding of lions for canned hunting and the lion bone trade
- Captive breeding of civets, monkeys etc. for wild meat consumption
- Captive breeding of birds, reptiles and amphibians for the exotic pet trade
- Captive breeding of mice, rats and monkeys for laboratory experiments

Some of these businesses are undoubtedly sustainable - in the sense that they have minimal impact on wild populations and biodiversity conservation, while others use quite destructive practices (such as salmon farming, where the resulting impact on other species has been well-documented). Ranching is a special case in that it involves the collection of eggs or juveniles from the wild (examples are turtles, pythons, crocodiles). We will use farming to encompass all 3 terms.

The interesting question in relation to the farming of wildlife is not if the process itself is sustainable, it is whether the business translates into any benefits for wild populations and improved benefits for local communities (or other social justice outcomes).

The reason the IUCN and other promoters of sustainable use endlessly put up Australian crocodile farming as the (one and only) poster child of sustainable use is that in this particular case there have been demonstrable benefits for wild populations (which are protected under Australian law) and also community benefits (to mostly Indigenous people collecting the eggs).

NO other examples of the conservation benefits and social justice benefits of wildlife farming are

routinely put forward by the advocates of these practices (vicunas used to be the 'other' poster child, but have been dropped because the benefits to wild populations have not been sustained).

Benefits to wild populations can only come about if the wild populations of these animals are protected in their natural habitats, which for most species exploited in this way simply is not the case. These are not animals bred to be released into the wild, they are bred to be slaughtered. There could also be benefits to wild populations if the farming displaces the hunting and harvesting of wild populations, but again, with a few exceptions, that is not the case.

It goes beyond the scope of this report to detail the exceptions, but even iconic species that are seen as having benefited from captive breeding are still in strife in the wild.

One example will suffice to illustrate the point. Tigers are predominantly farmed in China (~5,000 animals for tiger bone tonics [28]) and the US (5-7,000 animals as pets to signal status and for entertainment [29]).They are protected in the wild in all 13 range countries, with some 3,900 tigers left [30].

Ethical and Animal Welfare Considerations

We have excluded both the ethical and welfare considerations of widespread captive breeding from this discussion. Animal welfare issues are pervasive across captive breeding operations, whether it is lion breeding in South Africa, fur farms across the globe or bear bile farming in China and SE Asia.

Similarly, the scale of unethical practices is quite staggering in many instances. For example, animals such as mice and rats are bred en-masse for medical research. In 2017 in Germany of the 6.7million animals bred only 2.8million were used, the remaining 3.9million were 'destroyed without use' [31]. EU-wide in 2017 12.6million animals bred for laboratory experiments were killed without being used.

They are an iconic species, with (comparatively) vast amounts of money spent on conservation. And yet the primary conservation charity focusing on tiger conservation, with annual revenue of nearly US$1bn states: "*Across their range, tigers face*

unrelenting pressures from poaching, retaliatory killings, and habitat loss." [32]

Further, with few exceptions, these wildlife farming operations are just large-scale for-profit businesses that both satisfy existing demand and create new demand (through marketing). Environmental impact can be significant, simply due to direct land use, feed production and the use of drugs such as antibiotics and ectoparasiticides.

For example, the New Zealand deer industry grew from non-existent in 1970 to over 1 million deer on some 2,000 farms today [33]. This is an industry created purely for export, the deer are not native to New Zealand. New Zealand is now the world's largest producer of both venison and 'antler velvet' (which is used for health tonics in South Korea and China), exporting some NZ$200m worth of venison each year and an additional NZ$100m of antler velvet [33].

Community benefit, if there is any, is accidental and usually only in the form of employment opportunities at farms or abattoirs. **The most cited example of successful 'sustainable use' by its advocates - crocodile farming in Australia - generates a paltry AUD$500,000 in community benefit to (mostly) Indigenous egg collectors from the total economic benefit of the industry of some AUD$150million** [34].

What is rarely considered by the supply-side advocates of farming is the impact on demand. In many cases the existence of supply of 'farmed' product creates demand for 'wild' product to allow (luxury) consumers to differentiate. This is especially widespread in relation to luxury seafoods and wild meat consumption, but also applies to medical uses (where the 'wild' product is often seen as more potent than the 'farmed' one) [35].

In addition, creating the demand can create an incentive for illegal harvesting. This is widespread in the case of exotic reptiles, birds and ornamental fish, where breeding is both time consuming and expensive. For rare species of birds and reptiles that can cost thousands of dollars when traded as exotic pets this makes the (often minimal) risks involved in illegal harvesting worthwhile to poachers and traffickers.

High-density rhino farming in South Africa in anticipation of a potential legalisation of trade in rhino horn seems like the ultimate perversion of 'sustainable use'. Dehorning under the guise of security creates a stockpile of body parts for which there is no legal market, undermining demand reduction efforts and encouraging traffickers.

Poorly monitored farming and trading also results in animal welfare issues and increased risk of zoonotic diseases, as we so painfully learned with Covid-19. In this respect it should be pointed out specifically that by the end of 2019 only 9 of China's 22,000 captive breeding facilities had achieved a satisfactory level of animal health and welfare standards in line with China's revised Wildlife Protection Law (implemented in January 2017)[36].

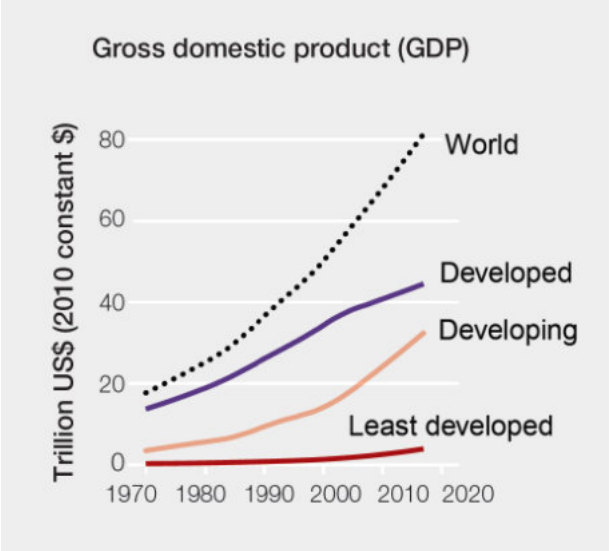
Section 4

Dimension 2 - Economic Growth

The second dimension of sustainable use is economic growth. The endless pursuit of growth is of course the main reason to resort to magical thinking in relation to ecological sustainability in the first place. That never-ending economic growth on a limited planet is not just a thermodynamic impossibility but also an economic one was first demonstrated in the “Limits to Growth” study commissioned by the Club of Rome in 1972 [37].

In 1987, after 15 years of denying the existence of hard ecological limits to endless growth, economists and politicians changed track and ‘sustainable development’ was born [38]. All of a sudden we could have growth AND remain within the limits of sustainability. As we wrote in Section 1, this is based on magical thinking and our collective desire to avoid hard choices.

In reality, economic growth has firmly remained the dominant dimension of the trifecta. **We are continuing to preference a win-lose-lose scenario while pretending to pursue win-win-win**. This will continue for as long as it is possible to claim that we still have time to change course before we are confronted with large-scale, catastrophic collapse of ecosystems.



Impacts on Sustainable Use

In order to understand how much sustainable use that involves trade is skewed towards promoting 'use' and economic growth over sustainability and social justice outcomes, we will look at:

1. How CITES operates in practice and where resources are allocated
2. How national laws and funding preference economic outcomes over conservation and social justice
3. How the illegal trade counts towards economic growth measures and why regulations are either absent or not enforced

It goes without saying that the trade in wildlife is not immune to the currently prevailing free-trade ideology. While bodies charged with removing trade barriers like the WTO have explicitly accepted the role and validity of CITES in restricting the trade in endangered species [39], any attempt to increase regulation and to improve sustainability beyond what CITES provides faces a steep uphill battle in convincing both policy makers and in passing legislation.

For example, a move by Belgium to regulate the keeping of exotic mammals as pets by means of a 'positive list' (legislating what is allowed, not what is forbidden) was held up in the European courts for 8 years, until the European Court of Justice finally ruled in 2008 that the Belgian Positive List was not in violation of free-trade regulations as long as it was based on 'objective and non-discriminatory criteria' [40].

How CITES Operates in Practice

CITES regulates the international trade in endangered wild flora and fauna, which currently includes trade restrictions on roughly 5,800 species of animals. In theory, the purpose of the convention is to protect species from over-exploitation through international trade. The preamble to the Convention acknowledges both the need to protect flora and fauna for future generations and the economic benefits of using wild species.

The way CITES operates in practice is that unlimited trade is the default for any species – it operates on a blacklisting model. For a species or population to gain protection under CITES, it needs to be listed in its appendices. This requires the responsible government agency to put forward a listing proposal which backs up the claim that the species or population is under threat from trade. While the criteria to gain protection are quite broad, the burden of proof is with the national authority of the proposing government. These are usually too small to do the required fieldwork and mostly 'outsource' the process to universities and NGOs – which may be conflicted by funding (see Section 6).

The result is that it takes on average 12 years to get a species listed as threatened on the IUCN Red List to be included on the CITES appendices and some have been waiting 24 years [41]. In addition, the whole process is contingent on funding to do the necessary research. If such funding cannot be obtained, then the national authority may decide to not pursue a CITES listing at all. **CITES does not have an inbuilt mechanism to correct for the fact that most endangered species are now native to poor and developing countries, which have the least resources to fund listing proposals.**

Further, the methodology to assess population sizes and declines is not prescribed by CITES, so depending on economic interests the government may be incentivised to pretend that the population status in its national borders is stable when in fact it is declining. Even for the most iconic species of

them all, elephants, it took until 2016 and funding from a billionaire to conduct a continent-wide population survey in Africa [42].

Because of the way CITES is (under)funded, it is unable to assist signatory parties with any of the necessary scientific work. **CITES has annual core funding of just $US6.2million [43] to regulate a trade estimated to be worth US$320billion** [44]. This should be contrasted with the budget of, say, the WHO, which is US$5.7billion. Whilst the WHO is not a regulator, it assists poor and developing countries in fighting infectious diseases and getting better public health outcomes, which is not dissimilar in purpose.

If sustainability of trade was truly equal to economic outcomes, both the listing model and the funding would have been set up differently. CITES would be based on whitelisting species for trade and funding to prove that trade is indeed sustainable would come from industry fees. This would be in line with a full implementation of the Precautionary Principle, as used for the pharmaceutical industry (see box below).

We outline the necessary changes further in the last section.

National CITES Implementations

CITES is a non-self-executing convention, meaning the implementation is up to national governments. What this means is that not just the national laws are up to each signatory country to decide and enact, but national governments also have full responsibility for funding the required authorities, monitoring and enforcement.

If sustainability outcomes were truly on-par with economic outcomes, the implementations of CITES would be stringent, national authorities would be well resourced and monitoring and enforcement would be comprehensive and highly effective. The reality is the exact opposite in pretty much all signatory countries, exporting or importing, poor or rich.

Whilst the CITES Secretariat has significant leverage over the quality and compliance of national laws, the national authorities that each country has to set up tend to be tiny, with just a handful of people in most countries. Management authorities concern themselves with issuing permits, not monitoring the actual trade or the importers/ exporters. Scientific authorities are equally small

CITES vs. the European Medicines Agency

IF CITES had been conceived as a proper industry regulator based on the Precautionary Principle, it would operate very differently. A good comparison can be made to the European Medicines Agency (EMA), which regulates the trade in pharmaceuticals in the EU. It is based on the Precautionary Principle - drugs cannot be sold until they have been proven to be safe and have efficacy.

In 2018 the EMA processed just 60 applications for new drugs, of which it denied 45. To do this work it has 900 staff and an annual budget of US$350million of which 90% comes from industry fees [45]. A company needs to complete all prescribed steps of clinical trials at its own expense before it can even submit an application for a the approval of a new drug to the EMA.

If we took the Precautionary Principle for the use of endangreed species seriously, CITES would operate in a similar way. Industry, not NGOs or governments, would have to do all the necessary research for the equivalent of a CITES NDF to prove use will be sustainable and trade can be managed sustainably. As with the EMA, the process for business to follow would be prescribed by the regulator. CITES would have the necessary staff and resources from industry fees to review and approve (or deny) applications at the scale needed for the number of species being traded.

and usually overwhelmed by trying to pursue more than a couple of new listing proposals.

Enforcement is contingent on cooperation from customs and border security, which tend to prioritise drugs, explosives and weapons in line with their higher national and international priority. In many countries training for customs officers on wildlife smuggling is absent or wholly inadequate. Only a handful of countries have dedicated wildlife officers at major points of entry or exit.

Given that these patterns are consistent across signatory countries, we have to ask why? If the aim was to ensure ecological sustainability and not just economic growth, why is so little money and priority allocated to the proper monitoring and enforcement of this dimension of 'sustainable use'? Sure, many exporting countries are poor and not in a position to finance extensive monitoring and enforcement activities without outside help, but why should it be up to range or transit country governments to carry the costs anyway? The trade is global, so the costs of enforcement should be carried equally by the businesses profiting from the trade and the governments charged with enforcing the provisions of the convention.

Of course this is not possible under the current structure of CITES**. CITES is a minimalist inter-governmental treaty, not a proper industry regulator. If it was conceived as a proper regulator, industry would be required to make a major contribution to the costs associated with the monitoring and enforcement of its provisions. In addition, those extracting wildlife resources would have to pay royalties which could then be used to achieve social justice outcomes.**

CITES does not prevent national governments from passing laws to this effect, yet there is not a single country on the planet that has implemented such a system of financing the monitoring and enforcement either for exporters or domestic producers of wildlife products.

Instead, currently the only discernible trend is the re-classification of wildlife as farm animals. China, South Africa and a number of Latin American countries have reclassified many species as farm animals, thereby making it easier for breeding facilities and farms to produce more and export more [46].

The Economic Benefit of the Illegal Trade

If concerns about ecological sustainability and social justice were on-par with economic considerations, then we would also have done a lot more to tackle the rampant and ever-growing illegal trade in endangered flora and fauna. Estimates of the illegal trade vary widely, as not enough resources are invested in monitoring and enforcement to get reliable data. Further, since laundering illegal items into the legal supply chains is comically easy given the flaws in the CITES permit system [47] and the prevalence of corruption [48], even a substantial part of the legal trade could be of illegal origin.

In 2018 the World Customs Organisation estimated the total value of the illegal trade in endangered wild flora and fauna to be between US$91-258billion annually [49]. On top of this massive amount itself, UNEP has estimated that the illegal trade is growing 2-3 times faster than the global economy. Given this enormous scale of the illegal trade and its staggering growth rate, why is so little done to stamp it out? In order to understand the motivations behind the lack of action, a few crucial considerations need to be taken into account:

1. The UN System of National Accounts stipulates that illegal activities are included in GDP calculations [50]
2. The illegal trade in wildlife and plants is seen as a ‘cavalier’ crime, of low risk to maintaining social order
3. The illegal trade in wild flora and fauna is not recognised as a transnational crime under the UN Convention Against Transnational Organised Crime
4. Current efforts to fight trafficking focus on anti-poaching measures, not financial flows or demand reduction

Points 1 and 2 give illegal wildlife trafficking an implied, but not overtly acknowledged, status as a ‘no downside’ crime. This contrasts with the drug and arms trades which also count towards GDP, but are seen to have serious impacts on a government’s ability to maintain ‘social order’. This approach is not exclusive to the illegal wildlife trade, governments use the same reasoning to largely ignore white collar crime.

Hence when it comes to wildlife crime, what is primarily penalised is criminal activity that violates property rights (such as poaching on private

property), but not illegal harvesting from the wild, trafficking, laundering or selling illegal products in destination countries.

This 'no downside' view is also likely behind the lack of inclusion of wildlife trafficking under the UN Convention Against Transnational Organised Crime. Wildlife trafficking has long been considered the 4th-largest transnational crime, yet no attempt has been made to amend the convention with another protocol to this effect. Such inclusion under the convention would make it much easier to have international cooperation in the pursuit of trafficking syndicates and to tackle financial flows.

Finally, no serious effort has been made to reduce the demand for illegal wildlife products and to fix the flaws in the CITES permit system that enable easy laundering of illegal items into legal supply chains. **The lack of consistent, broad based demand reduction initiatives is a clear indication that (domestic) economic considerations trump (distant) conservation outcomes**.

For example, only CITES Appendix I listed species cannot be marketed or advertised for consumption globally. Such restrictions do not apply to Appendix II listed species, despite the inability of CITES and its signatory countries to monitor the scale of both the legal and illegal trade in a species in an accurate and timely fashion.

War on Drugs vs. Illegal Wildlife Trade

To understand how much the illegal wildlife trade is seen as less important than other transnational crime, we can do a (rough) comparison to the illegal drug trade and the war on drugs.

The illegal drug trade is estimated at US$400billion [51], about twice as large as the illegal wildlife trade. The US alone spends US$47billion every year on the war on drugs, which includes costs for imprisonment and military aid to countries like Colombia [52].

The biggest funder of fighting the illegal wildlife trade is the World Bank Global Wildlife Program, which disburses around US$250million annually. In additon to funding anti-poaching and law enforcement measures, this also includes around US$28million annually for promoting 'sustainable use' [53].

Whilst not exactly comparable, the scale of the funding disparity alone highlights how differently the importance of the illegal wildlife trade is perceived.

Section 5

Dimension 3 - Social Justice

The third dimension of sustainable use is social justice. This was initially conceived as **intergenerational justice**, in line with the definition of sustainable use that current use meets '*the needs of the present without compromising the ability of future generations to meet their own needs*'.

The concept was later expanded to include the notion of '**community benefits**' attached to the use of biodiversity, usually expressed as poverty alleviation and alternative livelihoods. As we outline below, it would be better to frame this as a 'royalty' attached to resource extraction, instead.

Finally, what is rarely mentioned is that the social justice dimension also has a **transnational aspect** in that negative effects on biodiversity and costs of preventing illegal trade fall predominantly on poor and developing countries which supply the demand from developed countries.

Intergenerational Justice

In theory, the intergenerational justice aspect of sustainable use is a good idea, yet the way it is articulated tells us where our priorities really are. In the commonly accepted definition of sustainability the 'needs of future generations' are benchmarked to our 'present needs'. We understand 'current needs', but we really have no idea about the 'needs of future generations' because:

1. We collectively strongly believe in continued technological progress and hence will assume that later generations have a HIGHER capacity to deal with biodiversity degradation, and
2. Our brains unconsciously discount the future in a drastic manner. This is known as 'hyperbolic discounting' in behavioural economics [54] and is also a well-known element of construal level theory in social psychology [55].

The result is that when it comes to practical choices made today, the evidence is that we couldn't care less about the needs of future generations. Our collective acceptance of ever-increasing CO_2 emissions in light of the predicted catastrophic consequences for the climate and ecosystem speak volumes in this regard.

If we were to take our inherent flawed reasoning about the future seriously, sustainable use would involve extensive protections against the 'default' behaviour of humans and economic agents.

All use of biodiversity would be under the provisions of a strong, global framework based on the Precautionary Principle, because we simply cannot be trusted to (economically and socially) behave accordingly without being constrained in this way. **This would likely be best achieved using a global commons management approach and framework based on the assumption of earth as a closed system.**

That the current framework for using biodiversity is inadequate to the task of intergenerational justice is self-evident from the reports cited in Section 1. We only pay attention to loss of populations and species AFTER it is already too late to save them, lamenting their demise and promising to do better next time. Private property rights, economic growth and free trade top any considerations of the commons and the need to preserve biodiversity for the future.

Transnational Justice

Because biodiversity is not equally distributed across the planet or nation states, we also have to consider transnational justice in the protection of biodiversity and its 'sustainable use'. Humanity depends on the health of many global ecosystems for its continued survival. The most obvious example of the uselessness of a 'national sovereignty' approach to biodiversity as in CITES is the treatment of the high seas (the oceans beyond the 200mile exclusive economic zones) as a 'free for all', with no commons management plan in place. With growing human populations and increasing purchasing power (both of which raise GDP, so are considered 'good') this leads to the inevitable overexploitation of fisheries [56].

The Convention on Biological Diversity (CBD) recognises that conservation of biodiversity is "*a common concern of humankind*" [57] which would imply tackling issues of transnational justice in biodiversity conservation, yet in practice it is mostly

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an aspirational framework to inform national law making [58] with an 'attached' funding mechanism for project funding via the Global Environment Facility (GEF) [59].

The CBD does not contain any strict, binding obligations and it has no enforcement mechanism. At the same time, it is process-oriented in its design, so it would be possible to develop stricter protocols and legal principles with regards to the utilisation of biodiversity [60].

We will find out if this process has any chance of tackling the current decline in biodiversity when the CBD agrees on its post-2020 global biodiversity framework later in 2020 [61]. The recommendations from scientific advisory groups for this framework include a call for 30% of land and the high seas to be set aside for biodiversity conservation [62].

Transnational justice also implies an equal sharing of the costs of protecting biodiversity across all nations. The GEF was created with this goal in mind. It disburses money raised from 39 (rich) donor countries to the rest of the 183 member countries [63].

The last 3 funding rounds (2010-2022) each amounted to just US$1billion annually [64], which is no more than a drop in the bucket compared to what is needed and what would constitute transnational justice in global biodiversity protection.

Finally, the legal trade in biodiversity also creates issues of transnational justice. Currently the costs of monitoring, enforcement and resource management fall on (mostly) poor and developing range countries while the economic benefits go to businesses in (mostly) wealthy importing countries.

Businesses do not contribute to the cost of managing the trade or to mitigating the risks from overexploitation. Businesses also take no responsibility for other risks inherent in a global trade in wildlife, such as biosecurity risks when trading live animals.

Poverty Alleviation and Alternative Livelihoods

The community benefits aspect of the social justice dimension has received a lot of attention in recent years – but all at the micro level (projects that may deliver some benefits in some cases in some areas)[65]. New approaches are constantly put forward, such as payments via carbon credits or 'payments for ecosystem services' (PES), mostly because it has become abundantly clear that conservation projects don't generate enough employment opportunities to make any substantive difference to livelihoods.

At the same time, there is very little evidence that any of these schemes deliver sufficient benefits either in terms of ecological outcomes and *'...the majority of the available evidence suggests that payments were often too low to cover the opportunity costs of agricultural development or other profitable activities*' [66].

Further, the question of community benefits is normally presented without any reference to the wider impact of global, financialised capitalism. In order to assess the community benefits of sustainable use the first question that needs to be asked is where the profits go. The answer of course is that the profits go to those who hold the requisite private property rights - the shareholders of the businesses involved in wildlife trade and the landowners or owners of wildlife in case of farming. The second question is WHERE those profits go and the answer is, mostly, wealthy countries and secrecy jurisdictions ('tax havens') [67].

If community benefits and sustainability were concerns equal to economic growth, then the exploitation of biodiversity would be based on an assumption of maintaining the commons and no private property rights would be granted over any form of biodiversity.

Communities in or surrounding areas of significant biodiversity would be considered custodians of the 'biodiversity stock' and charged with maintaining the 'stock'. Logically, they would be paid for that 'work', either in the form of a basic income or through the redistribution of proceeds from exploiting the commons (e.g. using royalties).

It should be explicitly pointed out here that such a scheme would be very different from the current infatuation with PES schemes, which are designed to further the financialisation and commodification of nature. They are usually coupled to 'innovative' funding sources, which bring in financial investors who underwrite 'conservation outcomes'. These 'outcomes' tend to be based on what is measurable, not what is useful. This is not social justice; it is just another way of expanding markets. Ultimately free-market capitalism is only interested in endless growth, so markets constantly need to be expanded.

Financialisation vs. Social Justice

In recent years there has been a concerted effort to create and sell 'innovative' financial products, such as PES, that supposedly support conservation and social justice outcomes in relation to the use of biodiversity.

No matter what the proponents say, the only reason to create these instruments is to expand financial markets, as each of them involves both investors expecting a return and financial intermediaries taking a cut.

If the true aim was conservation and social justice, we would create a royalty framework for all use of biodiversity - extraction of living biomass would be subject to a proportionate payment to support both sustainability and social justice.

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Section 6

Institutional Conflicts of Interest

An analysis of sustainable use and its practical (non)existence would be incomplete without at least briefly diving into the motivations and conflicts of interest of the different institutional stakeholders. From the perspective of who is shaping the common perception of the concept and the stories that underpin it, the main groups are:

- Academics working in ecology or species conservation
- Large conservation IGOs/NGOs with government or industry funding
- Conservation activists/small NGOs without government/industry funding
- Politicians and government departments
- Supply-side producers and demand-side businesses
- Mainstream media

The simplest stakeholder in relation to their motivations and interests are the businesses profiting from the trade. Unless they are legally set up as certified B-Corporations, their sole purpose is increasing the trade and their own profit. They are embedded in the legal, financial and competitive trade framework that pushes them to operate this way, even if they didn't want to. In the case of listed companies, they may even feel compelled to ignore 'externalities', i.e. costs that are not legally required to be incurred.

Because shareholders could take legal action over incurring such costs (like ensuring sustainable practices) it is far safer for management to preference 'greenwashing' over taking meaningful action. Unfortunately large NGOs are complicit in this deception by creating equally meaningless 'certification' schemes which are not transparent and contain no enforcement provisions.

Most of the large conservation NGOs have bought into the notion of voluntary guidelines and self-regulation and self-certification, which lets business and government off the hook [67]. They have traded access to funding and status for achieving meaningful outcomes. Most support sustainable use (even as win-lose-lose) [68] and will therefore get government, IGO or industry funding because they accept the status quo [69].

Their actual impact is modest, at least if measured in terms of long-term structural change. The incentives to preserve the status-quo are more influential than internal commitments to reform or transformation, however strongly-expressed they might be in the speeches and policy statements that emanate from the sector [70].

The most vocal promoter of sustainable use in this space is the IUCN, which receives funding from governments, other IGOs and business [71]. As an organisation with nearly 1,000 employees and 16,000 affiliated scientists across the globe its voice carries enormous weight on conservation matters, but it has firmly swung behind the 'sustainable use' model, irrespective of its practical impossibility [72].

In contrast, many small conservation NGOs and activists will not support sustainable use, but their reach tends to be small or very local. They, like the large NGOs and academics, also need a licence to operate to do work and research in countries that push for increased sustainable use, making any public pronouncements to the contrary difficult.

It should also be noted that all NGOs attend CITES meetings and working groups only as 'observers', a status granted by the Secretariat or national governments which can be withdrawn at any time. The threat of being 'uninvited' is always looming over NGOs who are too outspoken in relation to the flaws and failures of the current system.

Academics like to be seen as impartial scientists but are embedded in an institutional framework that stages artificial competitions for grant applications to fund research and accepts 'paid for' research and consulting work to preference topics and results that please governments, university management and industry [73]. The lack of transparency around such funding and the suppression of results that may antagonise funders make it difficult to see the inherent conflicts of interest.

Academics also rely on publication metrics for their status and tenure and publications in peer-reviewed journals prefer research that conforms to the prevailing ideology (the win-win-win magical thinking). This is not unique to conservation/ecology academics, it applies to all disciplines [74].

The mainstream media have an abysmal track record of exposing systemic failures, their focus remains firmly on 'human interest' stories and scandals that can be blamed on 'a few bad apples'. They cannot risk to antagonise their corporate advertisers by questioning their business model, as most of their funding comes from advertising.

In the absence of public pressure and media scrutiny, politicians and government will mostly respond to vocal special interests and political donors. Because of the lack of public and media interest in the wildlife trade beyond cute/iconic species and high-profile poaching incidents, politicians and governments favour economic interests and outcomes, in line with the prevailing focus on endless growth and 'progress'.

Communities in or surrounding areas of wildlife exploitation have a valid expectation that they should benefit – especially as there is a history of displacement from land and of preventing them from traditional (subsistence) use of wildlife [75]. These expectations are often being exploited by economic interests, which make use of the social justice argument to push for trade liberalisation, when more often than not the real aim is to simply expand the level and scope of wildlife exploitation.

All of these institutional conflicts of interest need to be addressed if there is to be lasting change for the benefit of sustainability and social justice.

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Section 7

The Way Forward

We have examined the notion of ‘sustainable use’ of wildlife in relation to the almost universally accepted assumption that sustainable use can be a ‘win-win-win’ scenario for the 3 dimensions normally included in the concept – economic development (growth), ecological sustainability and social justice. **We have demonstrated that this ‘win-win-win’ assumption is a convenient story to absolve us of the need to make tough choices and rethink how we organise society and the economy to stay within planetary limits.**

As we have highlighted throughout this report, the lived reality is a win-lose-lose situation, with economic growth consistently being the winner and sustainability and social justice losing out. This is not only evident from the long-term decline in wildlife populations, but also from looking more closely at how ‘sustainable use’ is defined by the bodies charged with biodiversity protection. As we explained, the Addis Ababa Principles developed by the Convention on Biological Diversity in 2004 do not adequately deal with the conflicts of interest and trade-offs that would be required to achieve ecological sustainability and social justice.

It should be clear from the considerations presented here that as long as the basic premise of win-win-win can be kept alive as ‘conventional wisdom’, nothing will change in relation to reversing the global trend of rapid biodiversity loss.

In order to move past our current magical thinking approach to ‘sustainable use’, we need to explicitly drop the notion that a win-win-win scenario between economic growth, ecological sustainability and social justice is possible.

The first step towards changing our approach is the need to change our language around sustainable use. That means accepting that sustainability is incompatible with unrestricted growth and that the only way to reconcile the competing interests is to make hard choices and trade-offs. If the language and story of sustainable use changes this way, then restrictions on use are the default position. This flips the current approach on its head.

Unfortunately the current story is in the interest of those who profit immensely from the exploitation of wildlife, so they will strongly argue against new restrictions (as we have seen in the aftermath of the Covid-19 outbreak and the call for the closure of 'wet' markets). They can count on the apathy of the vast majority of voters in pretty much all countries, who show little interest in wildlife conservation compared to the other, more immediate, problems they are facing. The self-appointed champions of wildlife conservation in the large, corporatised NGOs and IGOs are severely compromised by the competitive nature of fundraising and by accepting funding from government and large business [76].

The story in relation to sustainable use will therefore not change independently of the overarching story of endless growth and progress. Fortunately, that story has been severely damaged over the last 2 decades and every new crisis just accelerates its demise. The time now should be spent to prepare the ground for a new story and to lobby for institutional and law changes to limit the damage already being done.

Short-Term Changes - Radical Transparency

The first step needed immediately is to lobby hard for radical transparency in the trade in CITES listed species through the adoption of better data collection and monitoring practices for both domestic and international trade. For CITES this means the global roll-out of electronic permitting and electronic permit exchange, using the UNCTAD eCITES BaseSolution software [77]. A global roll-out would cost less than US$30million and can be completed by 2022 [78]. The funding could either come via the World Bank Global Wildlife Program, or directly from one (or several) countries concerned about the risks of the current system.

Whilst fixing the CITES permit system is important, it does not automatically lead to traceability from source to destination. In absence of the ability of CITES to mandate traceability of shipments, this should be a key demand to be placed on industry, which is currently free-riding on the trade in wildlife.

Because the solutions for traceability will vary significantly depending on the type of species and the type of derivative product, industry must be placed in a position that mandates adoption of better practices. The adoption of transparency laws similar to the French Duty of Vigilance Law [79] (but with better compliance provisions) by all major importing countries would establish the necessary legal framework to force investment and publication of industry trade data, which could then be reconciled with CITES trade data.

Governments also need to be compelled to stop hiding behind 'commercial in confidence' provisions and provide comprehensive trade data to NGOs that want to verify the sustainability and legality of trade. Disclosures of potential conflicts of interest by NGOs and academics working on sustainable use need to become mandatory to assess claims made.

In combination these measures would likely lead to a vast reduction in the illegal trade and in the ability of traffickers to launder illegally obtained products into legal supply chains [80].

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Medium-Term Changes - Facing Up To Hard Choices

In the medium term (3-9 years) the most important changes would be to amend the CITES articles to a whitelisting (or positive listing) model and to set aside 30% of both terrestrial (non-desert) land and the high seas as protected areas for biodiversity conservation.

The latter will be dependent on the outcome of the negotiations on the post-2020 global biodiversity framework, but will likely require ongoing pressure for any such protections to be properly implemented and enforced. Making hard choices to curtail economic growth and preference sustainability and social justice requires changes to legislation, not voluntary codes of conduct.

Amending the articles of CITES is considered difficult because of the lack of recent precedent and the fact that it would be hard to reopen only some of the articles for renegotiation. Most signatory countries believe that such a renegotiation could lead to a worse outcome than what is in place now.

We would argue that what is in place today clearly is not working from either an ecological sustainability or social justice perspective, so CITES does need a fundamental rethink. **By going to positive lists the default position for any species will be "no trade", which fully reflects the Precautionary Principle. Applications for trade in a species will have to be funded by industry, significantly increasing the cost of trade.** CITES would dictate not just the standards for making applications for trade, it will also dictate the mechanism for monitoring and ongoing compliance.

Much of this can be re-purposed from the current NDF process, with better consideration of demand.

The big difference to today will be that funding is not a hurdle if industry is required to obtain a trade 'listing' before trade can take place. Application fees and ongoing listing fees could be incorporated into the listing mechanism to finance the CITES review process for applications and ongoing trade [81].

Long-Term Changes - A New Story

The most significant long-term (10-25 years) change is rewriting the story of endless growth and progress on a limited planet. Because the only way to achieve this is to take a commons management approach to sustainability and to view biodiversity as a stock to be maintained, this is not compatible with free-market capitalism and an economy-centric view of humans and society.

If biodiversity is treated as a common stock, then private property rights over land and nature will become the exception, not the rule. Accumulation will be severely curtailed and economic outcomes cannot be considered independent of sustainability and social justice outcomes – any necessary trade-offs are explicitly incorporated into the commons management system.

Whilst this might sound even more like wishful thinking than the current 'win-win-win' story of sustainable use, it is pretty much the inevitable outcome if we want to survive as a species. It will either be forced on us by the collapse of industrial civilisation or it will be a managed transition based on the realisation that we need to mitigate existential risk.

The choice is (still) up to us.

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