Modernising CITES

A Blueprint for Better Trade Regulation

Comprehensive Strategy for 2030

NATURE NEEDS MORE

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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.

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Foreword from the CEO

It is a sobering thought that more people find it easier to imagine the end of the world than the end of capitalism. Maybe this isn't so surprising when you see the level of protections to profits and investments built into international governance. These protections stand in the way of any modernisation to deal with a changing world context, from biodiversity loss to global warming.

Treaties, conventions and national laws need to be urgently modernised and strengthened to protect the most vulnerable and the planet, but business and investor interests currently takes precedence. This situation has been consolidated over the last 40 years, as the world has been conditioned to see that all regulation is bad. Instead, we have been led to believe that voluntary commitments, self-regulation and multi-stakeholder initiatives will protect the most vulnerable from the powerful economic actors who, behind the scenes, lobby to stymie progressive policies that may impede their profits.

The evidence indicates that most multi-stakeholder initiatives have adopted the same set of self-interested dynamics of corporations and their investors. If they are global, they are even less democratically accountable than their domestic counterparts; it is only those who can afford a seat that the table that have a voice. As a result, powerful players, who appear to lack concern for any form of environmental protections, have more access to shaping treaties or too much influence developing the positions that governments take internationally.

As corporations, industries and investors stand in the way of international governance, challenging international laws and treaties that are there to keep their exploitation behaviour in check, environmental and social justice are the losers. Only the agreements protecting trade and investment are well resourced and well enforced. Conversely those focused on the environment, such as CITES, receive limited resources, limited political attention and limited political commitment, to the point they are so impoverished they become meaningless and useless.

Instead, the now widespread Investor-State Dispute Settlement system allows companies to sue countries who strengthen domestic regulations to protect the environment. Investment arbitration firms bring claims against countries for loss of profits for investments in those countries, if regulatory standards are strengthened and could impact future profits. An example of this is playing out in Europe right now, with German energy giant RWE using the Energy Charter Treaty to claim compensation from the Netherlands over its planned phase-out of coal from the country's electricity mix by 2030.

It is in this context that we present our case for modernising CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), an international agreement between governments. Biodiversity loss is an international governance challenge, not an issue of more evidence-based science being needed. The May 2019 IPBES report proved that the legal trade in marine, freshwater and terrestrial species is a key driver of the extinction crisis. The system that manages this trade, CITES, needs to ensure that such trade does not threaten the survival of species.

CITES has failed in this task and modernising it comes down to greater investment and a better designed regulatory system. We present a comprehensive new model in this report. Our proposal will undoubtedly reduce the mind-boggling profits that have been made by businesses and investors from the trade in endangered species for the last several decades. They have had plenty of time to invest in improving supply chain transparency and sustainability, yet they have done nothing. All the evidence shows voluntary self-regulation by business rarely works. It is time to modernise and invest in independent global regulators to help save the little that is left.

Will we continue to let corporations and investors stand in the way of modernising international governance?

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Section 1

Introduction

The Convention on International Trade in Endangered Species of Wild Flora and Fauna, CITES, was agreed in 1973 and came into force in 1975. It was designed to make sure that endangered species are protected from overexploitation through trade. To achieve this protection CITES was given two core mechanisms – listing a species on Appendix I would preclude all commercial trade in the species and listing a species on Appendix II would require the exporting country to grant export permits only in cases where doing so would not be detrimental to the survival of that species.

All signatory countries would be required to set up a national Scientific and Management Authority under the rules of the convention, which would decide on the species needing protection under CITES and have the authority to grant permits for import and export. Signatories are not mandated to set up a dedicated Enforcement Authority. The only central body would be a tiny Secretariat in Geneva that would ensure the running of the Committees and Conference of the Parties and monitor compliance of the parties.

This model of a non-self-executing treaty assumes that all signatory countries have the necessary means to pass and enforce domestic legislation in line with the provisions of the articles. This assumption is clearly wrong. Today CITES has 183 signatory countries, of which 85 do NOT have an Enforcement Authority [1]. The track record of signatory countries in keeping the trade in endangered species legal and in compliance with the articles of the convention is abysmal – the illegal trade is valued between US$100-250 BILLION [2], somewhere between a third and three-quarters the size of the legal trade. Direct

exploitation for trade remains the single biggest extinction driver for marine species and the second most important extinction driver for terrestrial and freshwater species [3].

At the heart of the failure of CITES to protect endangered biodiversity lies the lack of funding to appropriately resource all aspects of trade regulation – scientific research, species management, monitoring and enforcement. The assumption that signatory governments would fully resource these activities was not valid in 1973 (as it was clear that poor and developing countries would lack the funds) and it has become much clearer since, as governments have stepped back from hands-on regulation to promote 'free markets' since the Thatcher/Reagan revolution in the early 1980s.

It should therefore come as a no surprise that CITES today is no longer fit-for-purpose. Investment in the most basic process upgrades, like adopting electronic permits and electronic permit exchange, is still lacking with maybe 15 of the 183 signatory parties having fully implemented e-permits in 2021 [4]! Funding for long overdue scientific research is mostly reliant on philanthropic donations, which means that only high-profile species (elephants, big cats, rhinos etc.) attract adequate funding. Yet these high-profile species make up less than 1% of the 38,700 species listed on the CITES Appendices.

With threats to biodiversity loss growing by the day, we need to change course and conduct a long-overdue assessment of the effectiveness of CITES to achieve its stated objectives. CITES has had only one review since it came into force in 1975. That review was in 1994 and focused on the internal workings of the convention, not its performance against the overall objective.

We also need to think about a better way of regulating the international trade in endangered species, by looking at the regulatory models in other industries. Not many regulators are as impoverished as CITES and in many cases the businesses who profit from trade contribute significantly to the regulator's operating budget.

This isn't the case with the businesses that profit from the legal trade in endangered species; which include many of the luxury companies. With CITES, business is well and truly getting a free ride.

This document presents a comprehensive blueprint for setting up a new regulatory framework for the trade in endangered species. The blueprint is based on achieving two core objectives:

1. Making sure that the international trade in a species is truly ecologically sustainable, and
2. Making sure that all such trade conducted is legal.

These two objectives are completely in line with the original CITES goal of protecting endangered species from overexploitation through trade and with the post-2020 global biodiversity framework goal of making sure ***all such trade is legal*** [5].

The reality is we are miles away from achieving both and the trend is getting worse, not better. The draft text of the already twice-delayed post-2020 global biodiversity framework says nothing about ***how*** to achieve the objective of making all trade legal; it simply sidesteps the issue of insufficient funding. A different approach is needed to fix the glaring problems and this includes solving the funding issue in a way that does not depend on national government budgets, signatory party dues or philanthropists.

The blueprint for a new CITES convention and regulatory framework presented here is based on just three core principles:

1. **Regulating business, not governments.**
2. **Making business pay the cost of regulation.**
3. **Fully adopting the Precautionary Principle.**

With the track record of a 45-year failure to get signatory governments to allocate sufficient funding for all parties to achieve the core objectives set out above, it should be clear that relying on government funding is not a viable option for regulating the trade. CITES gets core funding of just US$6.2 million pa from signatory party dues, which basically only allows for employing the staff in the Secretariat and running the committees and the Conference of the Parties. It is not enough to fully use the instruments (such as Reviews of Significant Trade) and sanctions at its disposal to properly police the trade.

The World Bank estimated that just US$260 million a year is allocated by governments and foundations to fighting the illegal wildlife trade [6], which is the forth-largest transnational crime. In contrast, about **US$100 BILLION** is made available to fight the illegal drug trade, which is estimated to be only twice the size of the illegal trade in endangered species [7].

Because the trade is legal and regulated, it should be obvious that making business internalise compliance and pay the costs of regulation is the only viable alternative. A huge proportion of the trade in endangered species is for luxury consumption – luxury seafood, tropical hardwood furniture, exotic skins in fashion and the exotic pet trade to name the four largest [8]. Getting business to pay the cost of regulation is therefore not just feasible, it is also viable in terms of raising the significant funds required to adequately resource all aspects of regulating and monitoring the trade.

We demonstrate in this document how such a framework for regulating business could be set up. We acknowledge that the number of businesses involved in the trade is large and supply chains are complex, requiring the adoption of a 'joint applications' model for all businesses involved in a particular trade. The regulatory precedent for this comes from the European Chemicals Agency, which uses joint applications to manage the import and manufacturing of chemicals in the EU.

We further make the case for using the **Precautionary Principle** in the regulation of the trade in endangered species, given that the risks involved constitute ***'morally unacceptable harm that is scientifically plausible but uncertain'*** on

the basis of both biodiversity decline and extinction threat to both current and future generations. We demonstrate how amalgamated assessments of biodiversity and extinction risk show that the current framework is failing and a switch to the Precautionary Principle is our only hope of halting unsustainable biomass extraction.

CITES currently does not apply the Precautionary Principle, instead it uses a blacklisting model for regulation, which represents a curious choice to say the least. Blacklisting models tell people (or businesses) what ***not*** to do, thereby criminalising non-compliance. We normally use them for criminal behaviour, e.g., we tell people not to kill or harm others. Yet such models say nothing (or very little) about ***how*** we want people (or business) to behave. This critical aspect is completely missing from the current CITES model (apart from stipulating the use of export/import permits).

The result is completely predictable – businesses participating in the trade in endangered species do not care about CITES and do not internalise compliance and the associated costs. This leaves governments with an impossible task. **In theory, it leaves every national government to monitor all businesses currently trading in CITES listed species, without even providing them a way of knowing who these businesses are.** The permit system used in CITES gives visibility only to the businesses applying for export or import permits, which are mostly entities set up specifically to manage import and export procedures. The rest of the supply chain is completely invisible to both CITES and national authorities.

We therefore propose a model for directly regulating business and making business pay for the cost of regulation. We further apply the Precautionary Principle, reversing the listing model to a whitelisting approach. Under a whitelisting model the basic principle is a default of 'no listing, no trade'. **Without providing proof of both sustainability and compliance upfront, the trade will not be approved and cannot happen.** The burden of proof shifts from governments, philanthropists and NGOs to business, which are the ones profiting from the trade and can afford to commission the necessary research and set up the compliance procedures. This model is already used in many other industries, we borrow some of the implementation specifics from the pharmaceutical industry and especially from the European Medicines Agency.

In our model the new CITES Listing Authority stipulates all aspects of how to do the upfront research to prove that the trade is going to be

ecologically sustainable, how to conduct the trade and how to monitor it, including traceability from source to final destination for all shipments. The model has the necessary flexibility to cover trade in easily distinguished and counted specimens (like live monkeys) compared to the different needs of, say, the trade in ornamental corals with hundreds of species with little or no morphological differences and bulk shipments in containers. The model further accommodates the different mechanisms for monitoring and enforcement that will be required to track and trace very different types of shipments. Monitoring catches on the High Seas is very different to monitoring crocodile farms or crocodile skin supply chains.

Our model acknowledges that the trade in endangered species is global and includes anything from small businesses only operating domestically to large multi-national corporations. We therefore propose to augment the current system of national authorities with a central (business) compliance authority and a central monitoring and enforcement authority. This provides the necessary flexibility in regulating trade on vastly different scales of volume and value and also on vastly different geographical scope. It also allows the regulatory framework to extend to places where national governments lack jurisdiction, such as fishing in international waters.

We discuss the implications of adopting this model and provide examples of how it would work in practice for a number of trades and species. We further present mechanisms to futureproof the regulatory framework, as any regulation is only as effective as the latest countermeasure adopted by traffickers.

Beyond using the Precautionary Principle to regulate the trade in species, we also propose a new Appendix I, for species that should not be exploited commercially either domestically or through any form of trade. This represents a slight extension of the current Appendix I listing model. CITES already urges countries to close domestic markets or to implement demand reduction initiatives, so we propose to extend its mandate to have the ability to make such decisions binding.

This would only apply to a very small number of species and we discuss two potential categories that would warrant inclusion on a ‘no commercial exploitation’ listing and the implications of doing so (including a funding model).

We further propose to broaden the CITES mandate in relation to biosecurity considerations, which seems overdue given the zoonotic origin of the current coronavirus pandemic and most other recent pandemics and the link to the legal wildlife trade (including wet markets). This again includes the ability to regulate domestic markets, as the consequences of inaction or lax domestic regulation will always be global when it comes to zoonotic disease outbreaks and pandemics.

The framework we present is comprehensive and internally consistent in relation to the core objectives outlined above, but we do not claim that it is politically viable at this stage. Making it happen will be difficult and require a combined push from key governments, IGOs and NGOs. Many individuals currently embedded in CITES will doubt that adopting such a radical overhaul of the convention will be possible given how little attention the trade in endangered species gets from both governments or the media.

The fact is that without a radical departure from the current state, we will not be able to arrest the decline in populations. The sense of urgency on climate change has increased sharply in the last few years, but **in reality the timelines and the level of extinction risk related to direct exploitation of biodiversity are a much bigger threat**.

Looking at this issue purely selfishly, from a human-centric viewpoint, without an intact biosphere human survival will be at risk and without implementing effective protections now the trend on biomass extraction will make widespread collapse of ecosystems inevitable. It would fatally undermine our claim to being rational and ‘superior’ animals if we let that happen.

Section 2

The Need for Modernisation

The preamble of the CITES convention states "*that wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come… against over-exploitation through international trade*" [9].

In order to assess if CITES, in its current form, is effective in achieving this objective we need to test if the trade in endangered species of wild flora and fauna is truly sustainable. CITES manages this process in accordance with its articles – by looking at every species separately. Under CITES rules all assessments, trade protections, reviews of trade and listing proposals are looked at and voted on species-by-species. Most academic reviews of CITES and CITES mechanisms therefore focus on whether the CITES rules and processes are effective at the species level.

Yet this ignores the question as to whether CITES is effective overall when it comes to protecting biodiversity from overexploitation through trade.

To answer the latter question, we need to look at amalgamated data and assessments and we need to test whether the mechanisms and principles that underpin CITES – such as funding, monitoring and enforcement – are effective in preventing any illegal exploitation, trafficking and sales of CITES listed species.

Finally, we also need to examine the question if the process for getting a species to be afforded protection under CITES is appropriate. Without a listing there is no protection, so being able to get a species listed in a timely manner in relation to the threat from trade (legal or illegal) is a crucial part of the overall effectiveness of the convention.

Amalgamated Assessments of Biodiversity

Thanks to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as of May 2019 [10] we now have the most comprehensive report of the status of biodiversity available. 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*", and

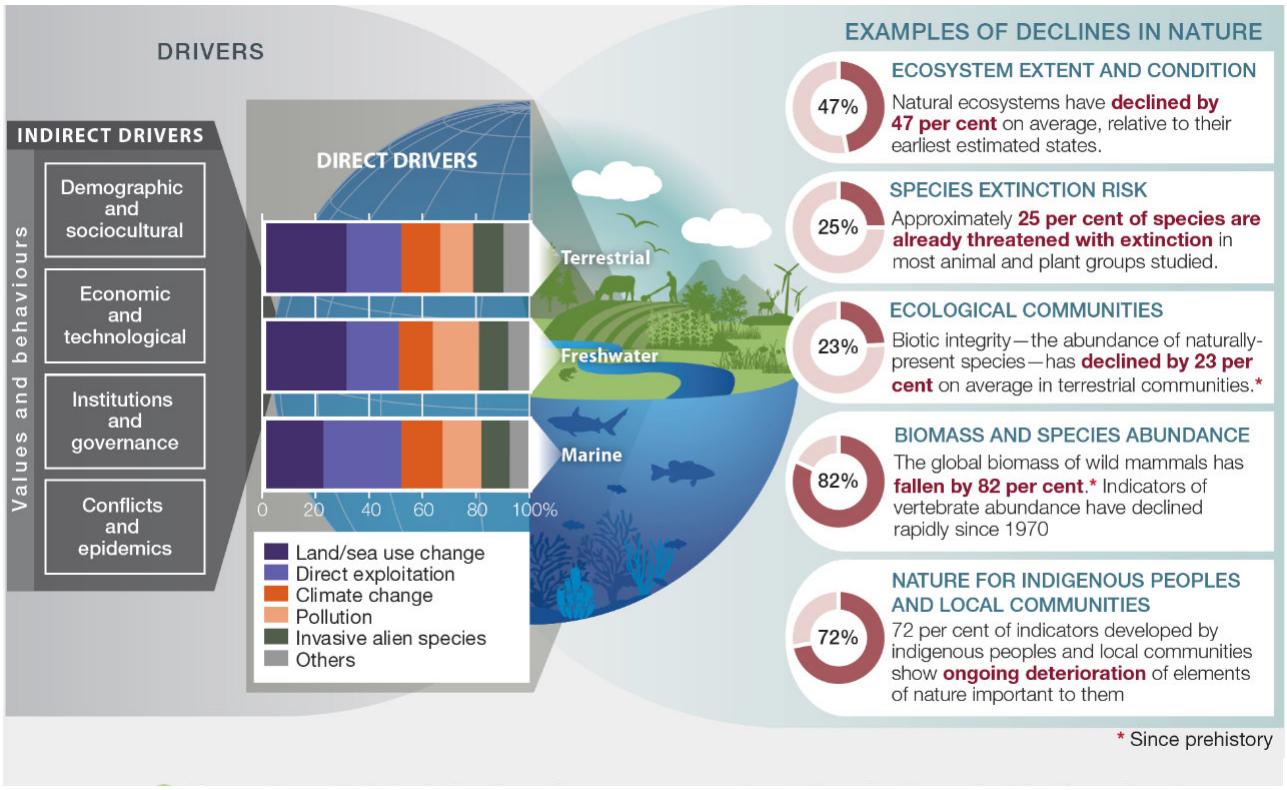
"*The Report finds that around 1 million animal and plant species are now threatened with extinction, many within decades.*"

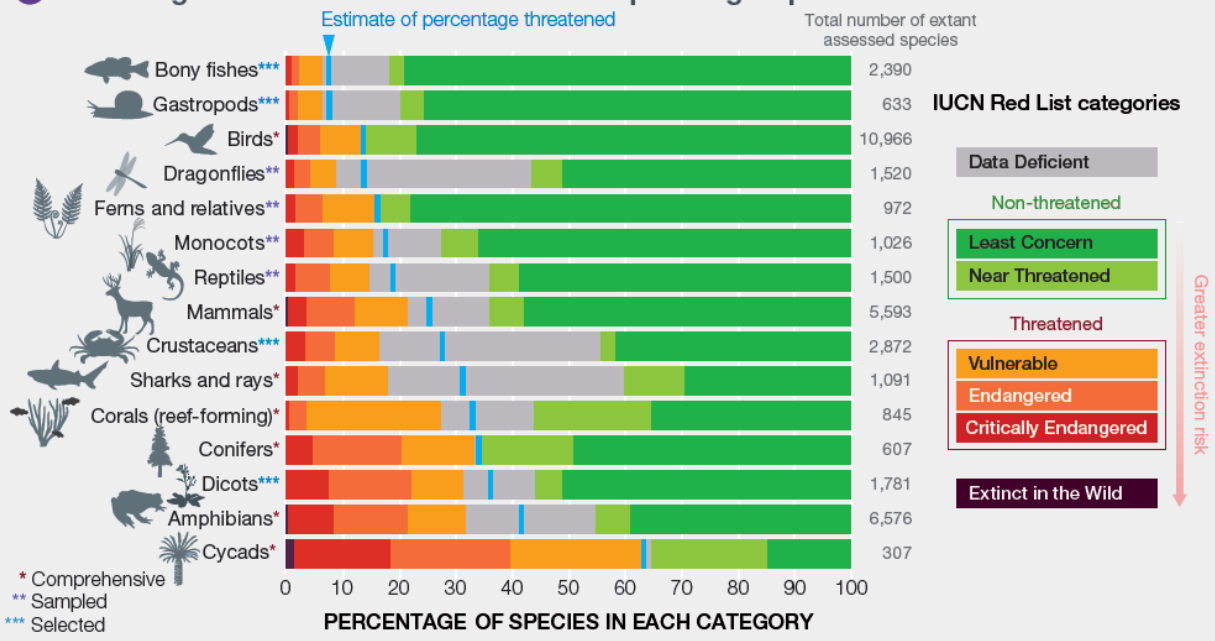
The report shows alarming declines in biomass and species abundance – the global biomass of wild mammals has fallen by 82%.

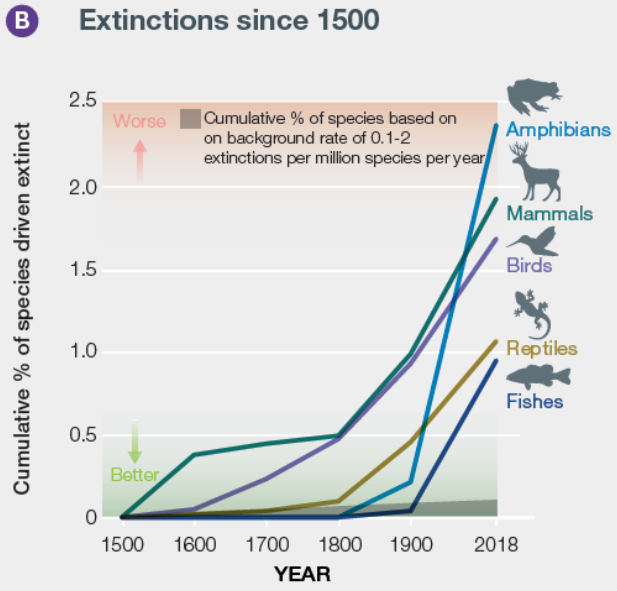
As can be seen in the graphic reproduced from the IPBES report below, **direct exploitation is more important as a driver of extinction than climate change, pollution and invasive species**. For terrestrial and freshwater species its impact is second only to land use (the conversion of wilderness to agriculture or human settlements). **For marine species, direct exploitation for trade and consumption is the most important driver of extinction risk.**

The breakdown of extinction risk shows that for animal species amphibians are most at risk, with sharks & rays, crustaceans and mammals not far behind. The report concludes that around 25% of all animal and plant species are already threatened with extinction.

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 'legal trade', are indeed sustainable.**







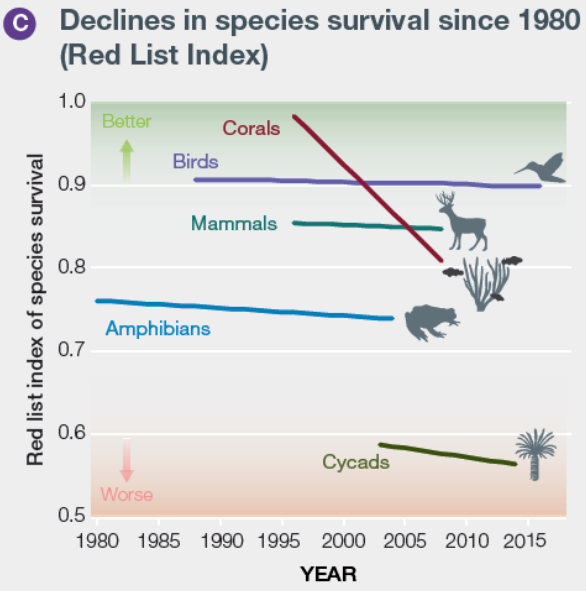


Figure SPM 3 A substantial proportion of assessed species are threatened with extinction and overall trends are deteriorating, with extinction rates increasing sharply in the past century.

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 [11]. The report was first published in 1998 and includes historical population data going back to 1970. It monitors over 4,000 species in over 16,000 populations across the globe to derive an overall trend in population abundance over time – the Living Planet Index. The picture shows the alarming decline in this population index in the last 50 years.

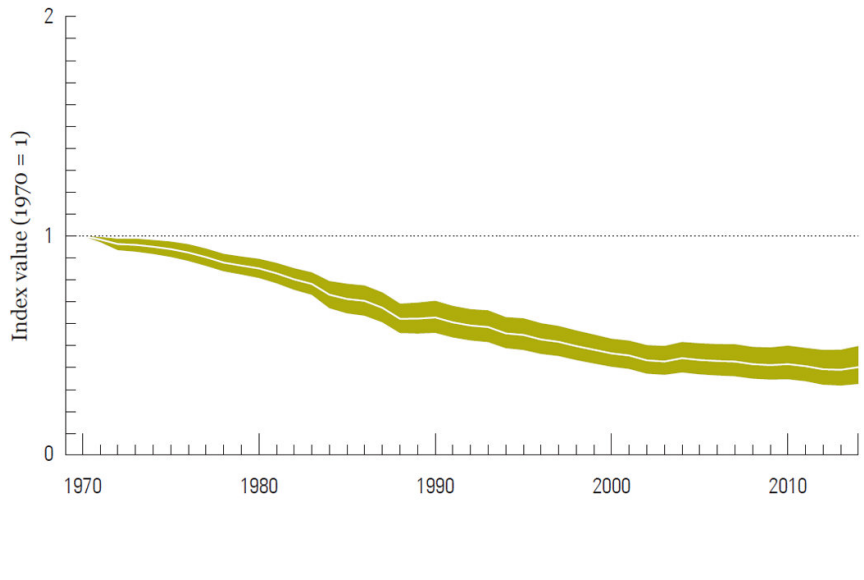
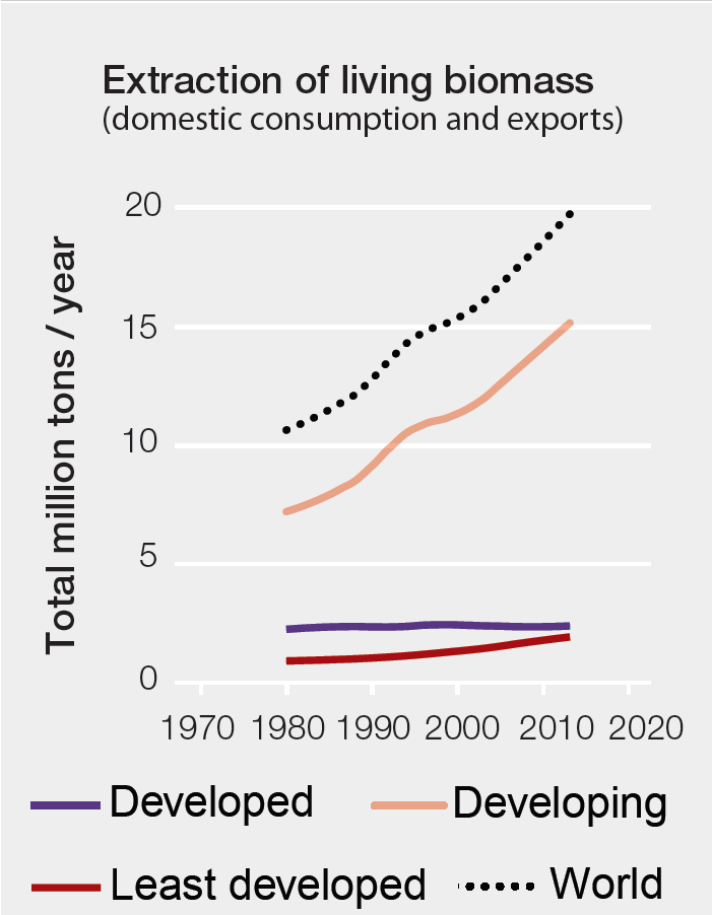


Figure 7: The Global Living Planet Index, 1970 to 2014
Average abundance of 16,704 populations representing 4,005 species monitored across the globe declined by 60%. The white line shows the index values and the shaded areas represent the statistical certainty surrounding the trend (range: -50% to -67%)[34].

Again, it is obvious from the historic trend and the observed decline of close to 60% in population abundance that our current practices are unsustainable. Combined with the analysis of the drivers of decline from the IPBES report, it is clear that ongoing trade and consumption of wildlife has had a major impact on animal populations.

The IPBES report further contains a graph of biomass extraction over time, demonstrating the link between direct exploitation and decline in biodiversity. The takeout from the graph (reproduced on the right) is that the trend remains unbroken, despite 'sustainability' and 'sustainable use' being on everyone's lips since the Rio Declaration and the inception of the Convention on Biological Diversity (CBD) in 1992 [12].



We could present further evidence in the form of recent meta studies into terrestrial insect declines (30% since 1990 [13]), declines in bird populations [14] and the well-documented decline in fisheries and catch volumes [15], but 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. Neither CITES nor the CBD in their current form are effective in arresting overexploitation and the ongoing decline in wildlife populations.**

The Role of the Illegal Trade

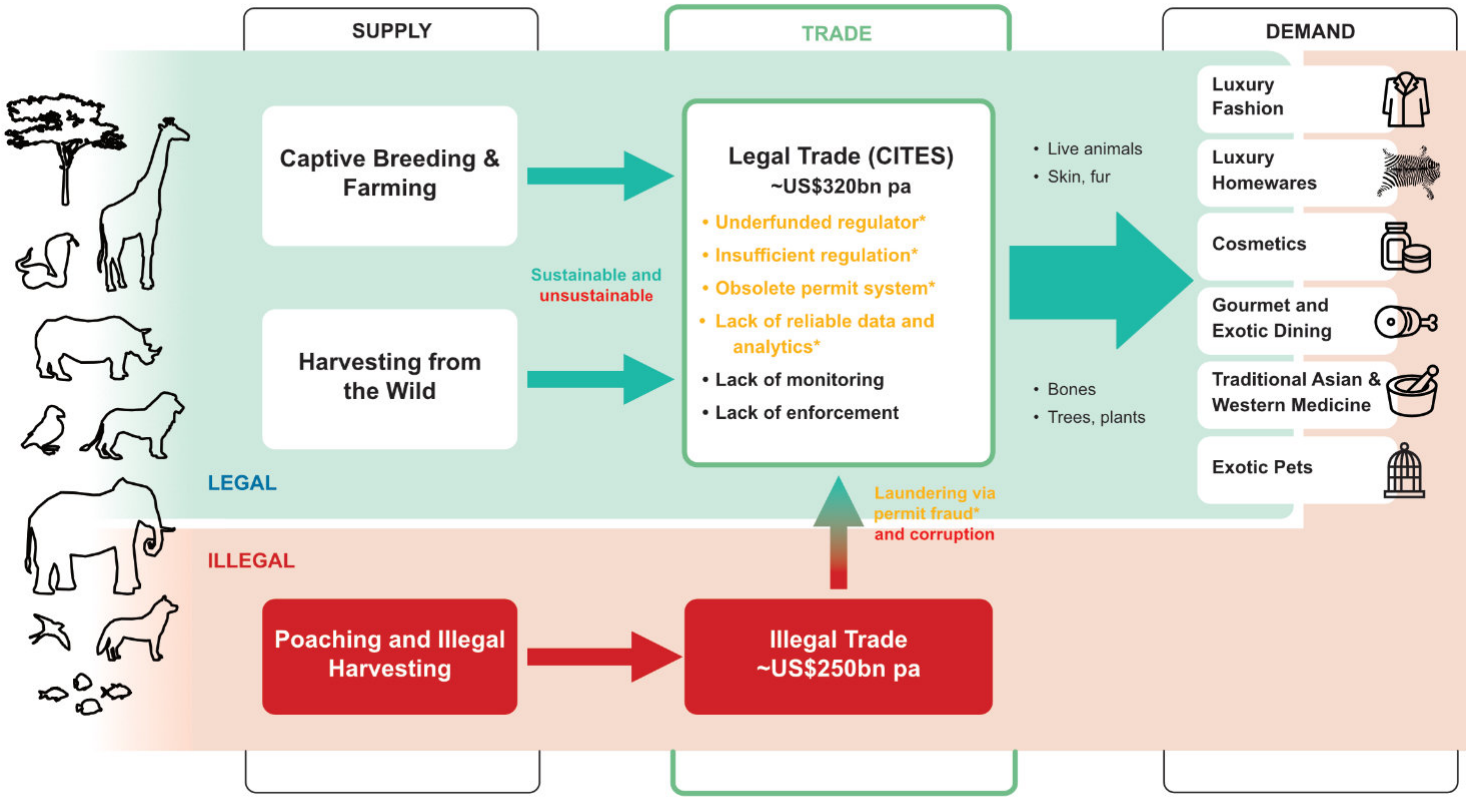
Achieving sustainability of trade is not only dependent on proper regulation of the legal trade, it also means **ensuring that all trade is legal**. If there is substantial illegal trade taking place, it will undermine any efforts at achieving sustainability. As is well-known, the illegal trade in endangered species is massive, global and it is growing rapidly.

In 2017, the illegal trade in endangered species was estimated to be worth between US$91-258 billion by the World Customs Organization [16]; and the UN Environment Program stated this illegal trade is growing at 2-3 times the pace of the global economy [17]. Similarly, it has long been accepted that wildlife and timber crime is the 4th-largest transnational crime in the world, yet it still is not included under the UN Convention Against Transnational Organized Crime [18]. It is hard to find any possible justification why it has not been officially recognised.

Because the legal trade is poorly policed due to lack of investment and priority and because of the endemic corruption that is financed by the highly lucrative returns made by traffickers, it has become far too easy to launder illegally obtained specimens into legal supply chains. The result is that the legal and illegal trade are now considered 'functionally inseparable' [19].

Whilst funds made available by the richest donor countries to combat the illegal trade have increased significantly, the approximately US$260million made available per year is minuscule compared to the scale of the illegal trade. On top of that, nearly 15% of that amount was donated to promote the 'sustainable use' of endangered species [20].

The desire to supply and the investment in promoting further trade has become a juggernaut.



** 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.*

No similar investment has been made into the CITES regulator that facilitates and monitors the global legal trade. The lack of proper regulation, monitoring and enforcement of the legal trade are a scandal that has been hidden in plain sight for decades.

CITES itself receives core funding of just US$6.2 million pa [21] to facilitate and regulate the legal, global trade in endangered species. It hasn't even got enough money to pay for unforeseen costs of the triennial Conference of the Parties [22]. The CITES trade permit and monitoring system is of such poor quality it is far too easy to launder illegal products into the legal marketplace [23].

Even business acknowledges the scale of the risk that the illegal trade poses; recent research undertaken by global risk consultants Refinitiv found ***65% of the businesses surveyed know or suspect that third parties they are conducting business with may have been involved in a range of illegal, environmentally damaging activities*** [24]. The Refinitiv report also confirms why an independent, external regulator is needed, as ***only 16% of respondents said that they would report a third-party breach externally and 63% of respondents agree that the economic climate is encouraging organisations to take regulatory risks in order to win new business.*** These facts confirm why it is so easy to launder illegal product into the legal supply chain and marketplace.

Despite this, business makes no contribution to the regulation of the trade under CITES beyond paying token permit charges. Instead, trying to put the brakes on this trafficking juggernaut has been left to conservation organisations and philanthropists. Money has flown into anti-poaching measures, but these only work for a handful of (iconic) species. Additionally, they have been given pocket change to create awareness-raising, education and behaviour change programs in demand side countries [25].

But if such campaigns are needed it means that the desire to consume has already been triggered or reinforced. Rather than needing campaigns to put a metaphorical foot on the brakes of desire, wouldn't it be best to never put our foot on the gas in the first instance?

It should be obvious from both the scale of these problems and how entrenched they are in the existing systems that demand reduction initiatives cannot fix the issues of both over-exploitation and the illegal trade. Similarly, the scale of the biodiversity crisis highlights we don't have the luxury of time to tackle the consumption of wildlife in an ad-hoc way, species-by-species, or business-by-business; an industry-wide approach is needed.

This means not only that the regulatory system is modernised and properly resourced across the globe, but also that business finally commits to supply chain transparency; something it has been saying is a top priority for years but with little real progress [26]. It would also mean that the right incentives are created so that industry reduces the use of endangered species when creating products, services and experiences and does not use endangered species in its advertising.

Nature Needs More Ltd, 2021

Why is CITES Failing Endangered Species?

At the highest level the failure of CITES to protect endangered species from over-exploitation can be understood by looking at the way it was conceived in 1973 and implemented in 1975:

1. **CITES is not based on the Precautionary Principle**. It assumes that exploitation of wild flora and fauna for consumption and trade does not pose a significant risk to humans that would warrant making 'no trade' the default position for any species. This is the result of a long-established ideology that humans are 'masters of nature' and have a (God-given) right to exploit it. While the risk may have seemed small in the 1970s, we now talk about the 6th mass-extinction event [26] and CITES has not been modernised (or even been reviewed) to account for the vastly changed circumstances.

2. **CITES ignores the reality of the graph on biomass extraction shown above** - practically all the unsustainable extraction takes place in developing countries. Instead, it treats all parties to the convention equally under the guise of 'national sovereignty' over wild flora and fauna. That a convention that regulates international trade ignores the question of supply and demand and the differences in challenges between importing and exporting countries is a reflection of the power constellation between first world countries and the rest of the world in the early 1970s.

3. **CITES was created as a non-self-executing treaty**, meaning all implementation costs rest with signatory countries. CITES provides no funding to countries to help them with implementation, monitoring or enforcement. It mandates a scientific and management authority, but not an enforcement authority. The CITES Secretariat has just 23 full-time staff and gets annual funding of only US$6.2 million [27], making a mockery of its capacity to support and police signatory countries on their compliance with the convention. This setup ignores the vast disparity between wealthy, importing countries and developing, exporting countries when it comes to the costs of research, data collection, monitoring and enforcement for all listed species.

4. **Enforcement Authority is optional**. In signing on to CITES, it is mandatory for the signatory country to implement a Management Authority and a Scientific Authority. An Enforcement Authority is optional, and a recent review [28] found that 85 signatory countries do not have a dedicated Enforcement Authority. The review was rightly concerned about the ***"level of attention given to discovering violations as well as to any resulting arrests, prosecutions, and so forth when violations do take place."***

5. **CITES ignores business**. From the perspective of the convention the entities that conduct the trade in endangered species do not exist. Businesses are allowed to free-ride; all regulatory, monitoring and enforcement costs are borne by governments (and some philanthropic foundations). Given that the trade in endangered species is considered one of the most lucrative trades in the world (with most products being luxury items) this is a serious design flaw.

6. **CITES processes were not designed for 38,700 listed species**. In 1981 only 700 species were listed on the appendices [29]. Neither the CITES committees nor the Conference of the Parties can cope with the volume of work that would be necessary to do justice to all listed species. In reality, only the high-profile species receive funding and attention.

These six problems combined lead to a situation where the illegal trade is out of control, legal over-exploitation continues unchallenged and there is no hope of making the trade sustainable without dramatic changes to address these issues. The next section looks at these and other issues that mar CITES effectiveness and compliance in more detail.

Section 3

Summary of Issues with CITES

In this section we will look at the main issues with CITES when it comes to providing effective regulation of the trade in endangered species and protecting species from overexploitation. This ranges from examining the major 'design flaws' outlined above in more detail to looking at a variety of practical problems with CITES that have become apparent over time as the number of listed species has exploded.

In the first instance we need to revisit the basic design principles of the convention and the implicit assumptions that underpin the original design. These choices lead to a number of well-known and well-documented problems in the way CITES functions (or doesn't function) today.

We cannot design a better trade regulation system for the trade in endangered species without looking at the original design choices and their implications. In order to justify opening up the articles for re-negotiation, we need to be clear on what choices and consequences are 'baked into' the current model.

Our viewpoint is that CITES exists to protect species and ecosystems that are threatened with extinction from overexploitation. Given that 25% of all species fall into this category today [30] and the future looks even bleaker based on current trends, drastic action is required to modernise CITES, not superficial changes. Without renegotiating the articles of the convention no such drastic action is possible.

From this perspective, the difficulty of renegotiating the articles of the convention is insignificant compared to the risk of mass-extinctions, catastrophic ecosystem failure and food chain collapses.

The Basic Building Blocks of CITES

CITES is based around three basic building blocks:

1. being a non-self-executing treaty,
2. national sovereignty, and
3. a blacklisting model for trade regulation.

The first building block means that CITES does not contain any mechanism for its implementation, all implementation is left up to signatory countries. The only central authority is a 23-person Secretariat that manages the committees and Conference of the Parties (CoP). It also plays a role in communication to the parties and in initiating sanctions for non-compliance. The Secretariat is financed from member dues, currently amounting to US$6.2million pa [31].

Under a non-self-executing treaty there is no option for global, centralised funding of implementation and enforcement, all funding is left up to signatory governments. It further means that there is no global arbitrator when it comes to business compliance, monitoring and enforcement. Each country is on its own, tiny Samoa (population 195,000 and GDP US$757million) equally forced to create a Scientific and Management Authority as is the United States (population 330million and GDP US$17trillion). Their vastly different resources to comply with the articles of the convention are simply ignored.

The second CITES building block of 'national sovereignty' over biodiversity implies that countries 'know best' how to protect their 'own' flora and fauna from over-exploitation. It assigns de-facto ownership over nature to nation states. Of course, the very existence of an international trade in wild flora and fauna reflects the fact that countries have vastly different ecosystems and biodiversity. The assumption of national sovereignty implies that ecosystems can be treated the same as other natural resources (oil, gas, coal, minerals etc.) – they do not need to be shared and there is no shared responsibility or dependence. This is utter nonsense – national borders are a human invention that reflect past power struggles and cultural identities, they provide zero useful guidance when it comes to protecting the biosphere that we as humans all depend on for our collective survival.

In this view of nature and history, the past is ignored, and the fate of endangered species is left to individual nations apart from the little protections CITES listings may be able to offer. The past of course includes the historic transformation of ecosystems and eradication of species in the industrialised and densely populated parts of the world. This regularly results in wealthy nations being perceived to lecture poor but biodiversity rich countries over what they should protect, whilst assigning no responsibility to countries who may have eradicated the very same species decades or centuries earlier. This is also disingenuous as the consumers of these species are overwhelmingly in those wealthy countries. This basic building block leads to acrimonious relationships between parties or blocks that can severely hinder the effectiveness of the CITES processes and committees. The decades-long saga over African elephants and their current 'split listing' are a case in point [32].

The third building block adopts a model of regulation that is normally used in crime and punishment, not trade regulation. This choice is curious to say the least. Blacklisting establishes what is forbidden, not what is allowed. It makes no or little attempt to regulate what is legal and how to be compliant. In any blacklisting model legal compliance is presumed, we don't tell people how to treat their fellow humans, we tell them what not to do – don't kill them, don't rob them, don't harm them. Law enforcement and the criminal justice system work with a blacklisting model because the vast majority of people feel compelled by existing social norms to not break the law. Without the straitjacket of social norms keeping people in line a blacklisting model cannot work.

It should also be noted that despite this listing model, CITES does not mandate an Enforcement Authority, which makes the choice even more curious.

The problem with applying this model to regulating the trade in wild flora and fauna is that historical norms of using wild species vary extensively and that the ideologies of capitalism and the enlightenment combine to assign special status to humans and declare us masters over nature (and hence no longer part of nature and no longer animal).

This means that the default social norm is that it is okay to 'extract biomass' – hunting, fishing, harvesting, trapping, keeping 'exotic' pets (birds, reptiles) and so on are all considered perfectly fine. Of course, humans have historically used nature in this way for tens of thousands of years, but for subsistence, not for the purpose of global trade with the aim to make money.

What this means is that in the case of preserving biodiversity and preventing overexploitation the default human behaviour is not aligned with protection and preventing extinction, so a blacklisting model cannot and will not work.

The same argument against a blacklisting model also applies when looking at other international agreements. We use blacklisting for extreme behaviours and crimes against humanity – think the UN Conventions on human trafficking, illegal drugs, nuclear proliferation and chemical weapons.

What makes these so different from regulating the trade in endangered species is that the range of products/offences they regulate are very small (like a handful of illicit drugs and a small number of nuclear technologies). In the case of endangered species, it started out that way (remember there were 700 species listed in 1981, out of a total of 10,000 species assumed to be traded globally [33]), but with 38,700 species listed today a blacklisting model is bound to be ineffective.

The Implicit Assumptions Behind CITES

The basic building blocks outlined above make CITES what it is today, but in order to understand its limitations and lack of effectiveness we also need to examine unspoken assumptions that informed the drafting of the treaty and its delineation from other conventions such as the Convention on Biological Diversity (CBD).

CITES predates wide-spread debate on the ethics of killing animals and also the ethics of keeping (sentient) creatures in tight, unnatural confinement like in zoos, entertainment venues and at home in the case of exotic pets. This debate has more recently extended to the notion of non-human rights, with its push to give animals and ecosystems rights to their existence independent of human needs and wants.

It is clear that the nature of this debate has been slowly shifting in recent years and we can anticipate that in 20 or 30 years' time the killing and keeping of a number of iconic and/or highly sentient species will be considered unacceptable by the broader public. Any modernisation of CITES needs to make provisions for such a shift in public opinion.

Another implicit assumption is that nature does not constitute a ***'commons'*** but can instead be considered private or government owned property, within the confines and jurisdictions of nation states. Anthropology and history tell us that hunter-gatherer societies did treat nature as a more of a commons [34]. Early city-states up to the advent of capitalism largely assigned ownership of nature to a deity, granting a representative of earth the rights (and responsibilities) of exploitation. The notion of private property rights over nature only took off in the 15th century with the beginning of the enclosures in England [35].

A growing number of people are now beginning to question the validity of this assumption in the light of global over-exploitation, the massive legal overfishing and illegal fishing and climate change due to human greenhouse gas emissions. The CBD has taken small, tentative steps towards a commons approach, but using a purely aspirational/voluntary model. With the upcoming new UN Convention on the High Seas we will hopefully get a much better reflection of a commons management framework.

In any modernisation of CITES the old assumption of private property rights needs to be weakened and the option of using commons management needs to be included. This means the power to regulate domestic markets, for example to enforce biosecurity standards to prevent future pandemics of zoonotic origin.

A further implicit assumption is that because the trade takes place in products derived from distinct species, a species-by-species approach to regulation is workable and sufficient. This approach mostly ignores the follow-on effects of extracting species from their ecosystems. Eliminating top level predators impacts prey species and their food sources. Cutting down the largest trees in the rain forest destroys the canopy and usually the whole ecosystem. CITES pays little attention to these consequences, unless they have been thoroughly examined in the NDF (see Burden of Proof), which is rarely the case.

The Lack of Funding and Enforcement

One of the main issues with CITES is the lack of any funding mechanism beyond what national governments are prepared to spend on implementation, monitoring and enforcement. Given that environmental concerns and wildlife conservation tend to rank very low on voter priorities when selecting governments, the pattern across the world is that countries do just the minimum required to remain compliant. Many governments can't afford even the basics of compliance or are undermined in their efforts by the lack of interest from their police force/customs and by corruption. Only half of the signatory countries have a dedicated enforcement authority and very few countries have specially trained wildlife trade officers at key ports and airports. It should be obvious that without dedicated endangered species crime enforcement authorities and customs officers it will be impossible to police the legal trade and stamp out the illegal trade.

In order to fully appreciate the scale of difference in funding we need to remind ourselves here that an estimated US$100 billion is spent globally each year to combat the illegal drug trade, equivalent to about 19% of its total market value. By comparison, a World Bank study found that from 2010 to 2018, 24 multilateral, bilateral and philanthropic international donors collectively committed $2.4 billion to combat illegal wildlife trade in 67 African and Asian countries, equivalent to $261 million a year [36].

Estimates of the illegal trade in endangered species vary between US$100 to $250billion [37], so this level of funding corresponds to 0.1-0.25% of its value. ***If we include the legal trade, it is less than 0.1% of the total market value.***

When the Rio Conventions like the CBD were set up in 1992 a funding mechanism to support implementation was created via The GEF (Global Environment Facility) [38]. Whilst still based exclusively on government contributions, at least the GEF mechanism transfers money from the 39 'rich' donor countries to the remaining 145 participating countries of the GEF, addressing the disadvantage of developing and poor countries to some degree. Funding is provided in 4-year funding rounds, currently amounting to about US$1bn pa. That may sound a lot but is nowhere near enough to cover the total biodiversity protection needs of 145 countries.

CITES was never added to the conventions that GEF funding supports and does not even have a partnership agreement with the GEF.

The utter lack of funding for all aspects of CITES related activities such as research for listing proposals and non-detriment findings, monitoring, enforcement, trade analytics, trade risk flags and investigative work to stamp out the illegal trade leads to a dysfunctional regulatory system that can neither guarantee that the legal trade is sustainable nor contain the illegal trade to a level considered acceptable in other well-regulated markets such as pharmaceuticals. The medicines industry considers keeping counterfeit drugs below 10% of the legal trade as essential to preserve trust in the market.

In the current funding environment NGOs and academics all compete for the little funding that is made available by governments and philanthropic foundations, leading to a lack of cooperation and systemic approaches when it comes to the trade in endangered species. This further exacerbates the species-by-species approach inherent in CITES and advantages 'iconic' species that it is easier to get funding for over 'unpopular' species (such as frogs, spiders, snakes and most plants).

Inequities

CITES has added a focus on livelihoods for local communities to its strategy in the last decade, explicitly acknowledging that rural communities that live in or around areas of 'biomass extraction' rarely benefit from the trade in specimen on their (historic) lands [39]. This has been closely tied to the notion that the trade in endangered species can be part of the poverty alleviation / alternative livelihoods agenda.

Yet at the same time there has been little or no acknowledgement that conservation needs to be part of any alternative livelihood models that are used to implement initiatives, with most models we are aware of making no mention of this [40].

Combined with currently still popular ideas about paying local communities for 'ecosystem services' we find ourselves in a situation where a trade regulator and a convention for the protection of biodiversity is suddenly in the business of poverty alleviation. Of course this did not come about by accident, it is mostly used as a political argument to delay or hinder species listings or to weaken existing protections under the guise that they impact the livelihoods of rural communities. It is even used as an argument to change the listing criteria and decision making at CITES [41].

As was acknowledged earlier, CITES does have strong inequities baked into its design. Poor and developing countries carry most of the costs of implementing the convention but get no funding to do so. At the same time the notion that CITES should somehow 'take care' of local communities is fanciful for a convention based on private property rights over nature (see above). The question of local community benefits would require accepting a commons management framework, it cannot be settled in a meaningful manner under a system of private property rights.

We return to the question of how to support local communities at the end of Section 8, when we discuss funding for the new model proposed in this document.

Burden of Proof, Decision Making and Data Collection

Under the current blacklisting model, the burden of proof lies with those who oppose trade, which in most instances means conservation NGOs, philanthropists and sometimes governments. Those with the power and the money – the businesses that generate massive profits from the trade in endangered species – can focus their attention on lobbying governments and undermining NGOs, without having to make any financial contributions to regulation.

That this model is bound to fail endangered species from overexploitation should be self-evident. Relative power in influencing the outcomes matters massively in a convention where all listing proposals are decided by a 2/3-majority vote of signatory countries. **The decision making process in CITES is highly political, not scientific.** The idea that country representatives are making informed decisions based on documents submitted to the Conference of the Parties (CoP) may have been valid for a little while during the 70s and 80s, but today delegates would have to read and digest thousands of pages of submissions in the 150 days between the submission deadline and CoP [42].

This may be feasible for the US, China and the EU, but small countries with one or two (often sponsored) delegates have no hope of working through all these documents whilst continuing to do their day job. The same is true for the work of the committees, everyone on those committees has a day job yet is required to work through again hundreds or thousands of pages of documents every year before the committee meetings. The result of the ever-increasing number of species listed on the appendices is that committee and CoP agendas keep on growing with a CoP now taking nearly two weeks. **During those two weeks the effectiveness of existing listings is not even discussed**, all the time is taken up with new listing proposals, up/down listings and refining the internal workings of CITES, such as interpretation and implementation matters, administration and finance [43].

The scientific input into the CITES decision making process is mainly in the form of listing proposals,

non-detriment findings and reviews of significant trade. Obviously, a lot of work is required to present scientific evidence to get a species listed or uplisted and this work falls on the nations proposing such a listing and the NGO(s) supporting them. The reality of Scientific Authorities is that most of them employ only a handful of people, even in wealthy nations. Combined with the political nature of the listing process it should come as no surprise **that research found that species wait on average 12 years after being designated as threatened from trade on the IUCN Red List before they get a CITES listing and that it can take up to 24 years in some cases** [44].

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" (NDF), they are a guarantee that exports of products from listed species covered by the NDF have not harmed wild populations or ecosystems [45].

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. This lack of specific guidance and of binding criteria leads to NDFs of different scope and different quality. The absence of binding criteria and the lack of a central evaluation means the process is bound to be flawed, resulting in Appendix II listed species being overexploited even in the absence of any substantive illegal trade.

CITES does have a mechanism to 'check' on the effectiveness of the original NDF and the management plan for the species that has to be developed as part of the NDF process – Reviews of Significant Trade [46]. Because of the lack of funding for both CITES and the national authorities, the actual number of such reviews is

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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) [47].

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 increasing number of species listed.**

To make matters worse, the most critical input to all listing proposals, NDFs and Reviews of Significant Trade, namely the current level of trade in a species, is completely unreliable. For non-listed species, trade data are mostly non-existent. For listed species, the CITES trade database is supposed to capture the volume of trade through the information on CITES permits. Because CITES does not mandate import permits for Appendix II listed species, the export data can rarely be reconciled with import data (obtained through voluntary reporting by parties).

The quantities on export permits often lack a unit designation and usually vary from what is actually being shipped. If customs do not capture actual shipment quantities (and in the same units) and if that shipment information is not linked to the export/import permit, then the data become highly inconsistent and unreliable, which is indeed the case. The academic literature on the trade in any species always dedicates a lengthy section to discussing the trade data and to trying to find better/independent data sources to check what is reported in the CITES trade database (such as LEMIS in the US) [48].

Compare and contrast this lack of monitoring and data quality to well-regulated industries (such as aircraft components and pharmaceutical drugs) where shipments can be traced end-to-end and reporting and monitoring is comprehensive and reliable.

Fraud, Laundering and Corruption

The most worrying part about the illegal trade in endangered species is not just the sheer scale of it, this alone points to massive regulatory failure. Under the current system it is laughably easy to launder illegally obtained specimens and products into legal supply chains. From a regulatory point of view that is a unique situation, in other industries with a regulated, legal market and an illegal market doing so is much harder because of how supply chains are controlled. For example, in both aircraft components and pharmaceuticals sophisticated tagging methods are employed to track items or batches from source to destination. Further, producers and end users have to be registered and certified with the regulator and fulfil stringent compliance conditions to remain so.

None of these regulatory mechanisms exists in the trade in endangered species under CITES. Claiming that illegally harvested specimens are ‘captive bred’ can be as easy as putting it on the export permit application. In some cases, it will be enough to know that the issuing Management Authority lacks any means/manpower to verify this claim, in other cases it may require the payment of bribes. Either way, as soon as the export permit has been issued the items are ‘legal’ and will no longer be questioned at any stage of the supply chain. Research using the LEMIS database in the US found over 5,600 branded luxury fashion items seized by US Customs between 2003 and 2013, mostly exported from Italy, France and Switzerland. With 61% of items seized being exotic leather products made of

reptile skin, the seizures are most likely due to CITES violations. [49].

Because producers are not subject to any registration or certification requirements in most countries, specimens cannot be traced back to where they came from. Only the exporting company's details are captured on the permit. This is bad enough in terms of the illegal trade, it is even worse from a biosecurity point of view. What if the outbreak of a next zoonotic pandemic comes directly from the international trade in endangered wildlife, not a domestic 'wet market'? How do we trace the specimens back to where they came from?

The flaws with the current permit system go further than just the issues of mislabelling. The vast majority of signatory countries still use 'paper' permits, by which we mean any form of permit that cannot be verified anywhere in the world in real time. **This may have been acceptable in 1975 but is a sad state of affairs in 2021.** Because permits cannot be validated in real time, even at customs, it is laughably easy to either 'make your own' permit using a scanner and a laser printer or to alter permits, reuse them or to 'lose' them when convenient.

The lack of electronic permits also has massive consequences when it comes to detecting shipments containing illegal items. Most of the world's custom agencies are today using automated risk assessments to decide on container and other shipment inspections, but non-electronic documents are not considered by these systems. As a result, illegal wildlife products are usually only detected because of tip-offs or discovered by chance in shipments containing other illegal items (drugs, firearms etc.).

The current blacklisting system in CITES also means that the burden of proof when confiscating items lies with customs, not the exporter. If, for example, the exporter claims on their paperwork that the lizards being shipped are not CITES listed, it would be up to customs to prove that they are and require an export permit. Given how similar many species of reptiles (or orchids, or corals, or fish) look to the untrained eye, this is a prohibitive hurdle to jump for normal (non-specialist) customs officers.

Section 4

A Better Approach to Trade Regulation

In light of the many problems with CITES outlined above and the dire situation in terms of biodiversity loss and the unsustainability of the trade in endangered species under the current regulatory settings, it is imperative to modernise CITES and create a system that appropriately protects endangered species whilst still allowing trade to continue.

To design such a system, we need to start from new building blocks and learn from other industries that already have better regulatory systems in place. Because of the threat of serious and irreversible harm, to both humans and the biosphere overall, posed by the exploitation of biodiversity for trade, we base the proposed new CITES framework on the Precautionary Principle.

The Precautionary Principle is defined as follows [50]:

When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. Morally unacceptable harm refers to harm to humans or the environment that is:

- *threatening to human life or health, or*
- *serious and effectively irreversible, or*
- *inequitable to present or future generations, or*
- *imposed without adequate consideration of the human rights of those affected.*

The analysis presented in Section 2 above, as well as the extensive analysis of the overall situation of biodiversity in the IPBES report from 2019 and the role direct exploitation for trade plays in the looming extinction crisis make application of the Precautionary Principle a necessity. The longer we delay such a move, the more likely we are to end up in a situation where the resulting damage caused to ecosystems and populations becomes a clear and present threat to human life and health and causes serious and effectively irreversible damage to the environment.

The coronavirus pandemic of 2020/21 is a great example of the sort of 'morally unacceptable harm' the trade in wildlife can cause. The pandemic was zoonotic in origin, as are 75% of all new infectious diseases [51]. The lack of regulation of the trade not only created the conditions for the virus to jump the species barrier to humans, it also made it impossible to retrace the chain and find the original and intermediate host. Once we count the human and economic cost at the end of the pandemic, the monetary cost of regulating the wildlife trade properly will pale into insignificance. Better regulation is a crucial part of preventing the next pandemic and applying the Precautionary Principle is the only way to deal with risks that are 'plausible but uncertain' and that are of such high severity that they put millions of lives at risk.

If we accept that the only way to regulate the unacceptable and potentially catastrophic risks inherent in the legal trade in endangered species is to apply the Precautionary Principle, then we can look to other industries that already base their regulatory system on this principle to learn from them. Specifically, we can learn from the regulation of trade in medicines, insecticides, chemicals and aircraft and aircraft components. Nature Needs More has looked at these industries and their main regulators (FDA/EMA, ECHA, FAA/EASA) to design the new system for CITES.

Looking at what is working alone is not enough, though. We must also examine regulatory failures to avoid creating a system that is either not fit for purpose or can be easily undermined.

Avoiding Regulatory Failures

Regulating complex systems is not a trivial task and it should come as no surprise that there is a long history of regulatory failures. Sometimes these are 'by design' when industry lobbying has been so effective that the framework created can be easily hollowed out or be creatively sidestepped. **Mostly regulatory failures are a failure in adjusting the framework to shifting realities**. For example, establishing rigorous regulation of mortgages is fine and well, until some financial institution invents CDOs (collateralised debt obligations). Then suddenly tranches of these same mortgages with different risk profiles (including subprime mortgages) can be 'repackaged' into CDOs and sold to investors as AAA rated securities. The financial crisis of 2008 was the result of the failures to adapt regulations (and ratings) to these new products and derivatives.

Point 1: Regulatory frameworks need to evolve as the industry/context evolves.

The second common failure is 'regulatory capture', when the regulator gets too close to industry to render it ineffective. The Boeing 737 MAX tragedy is a good example of this type of failure. Because aircraft type certifications have become so rare, it was deemed unnecessary for the FAA to retain the thousand or so engineers necessary to grant certification. Instead, Boeing engineers were seconded to the FAA when and as required, creating a potential conflict of interest and the risk of regulatory capture. Shortly before the 737 MAX certification the reporting relationships of these seconded engineers were changed, under the new model they continued to report to their Boeing managers, not their FAA superiors. That completed the regulatory capture and led to the failure of the FAA to properly examine the MCAS system which caused the two crashes [52].

Point 2: Avoid regulatory capture by industry, keep industry at arm's length.

The third common failure is to starve the regulator of funds, restricting its headcount or not giving inspectors the required powers to conduct the business of regulation. These are all examples of creating a weak regulator, which is unable to enforce compliance. This is probably the most common type of regulatory failure of the last 30 years and often a 'desired' feature so that governments can be seen to act without 'unnecessarily inconveniencing' industry.

Point 3: Create a strong regulator with a secure funding stream and full enforcement powers.

Putting people in charge of the regulator who represent industry interests either through executive appointments or board appointments is another strategy to weaken the regulator through political interference.

Point 4: Insulate executive and board appointments from political and industry interference.

Self-regulation has been a buzzword for both industry and governments ever since the advent of neoliberalism in the mid-1980s. This was later augmented by the creation of "multi-stakeholder initiatives', which supposedly give other stakeholders a voice in the self-regulation by industry. To anyone familiar with regulatory failure it should come as little surprise that neither self-regulation nor MSIs are effective in practice [53].

Point 5: Avoid self-regulation or multi-stakeholder initiatives.

Lack of timely reporting is another form of regulatory failure. This ranges from the lack of availability of data/information because it is not collected, or collected late, or of poor quality etc. The CITES Trade Database is a good example of such a system. This type of regulatory failure also includes the protection of information on dubious grounds, such as 'commercially sensitive' or 'commercial-in-confidence'. In the case of

regulating business supply chains transparency needs to be stipulated and enforced, as most businesses have little idea about their full supply chains (beyond their immediate suppliers).

Point 6: Create radical transparency and ensure timely availability of all data and information.

Poorly designed regulatory rules may result in 'creative compliance' or compliance in name only. This is not always completely avoidable, as the rule makers generally cannot anticipate all potential actions of both the rule takers and the rule breakers. Rules need to be consistent and easy to understand, implement and enforce. The more doubt is created, the easier it becomes to bend or side-step rules. Hence rules need to be amended as new behaviour is uncovered and the system needs to be redesigned if it becomes too complex or loses internal consistency.

Point 7: Create a consistent set of rules, that are easy to implement and enforce. Allow for rules to evolve.

Finally, any regulatory system that does not force industry to internalise the risk is bound to be ineffective. CITES is the prime example of such a system, industry at present does not and need not care about CITES beyond obtaining permits. Yet the trade is conducted by businesses, not governments. COVID-19 highlighted how businesses are even shielded from the inherent biosecurity risks involved in captive breeding and the live animal trade. For example, 15 million minks were culled in Denmark because of a COVID-19 outbreak in breeding facilities, yet the government agreed to pay US$3 billion in compensation to mink farmers, with no additional requirements on breeding facilities [54].

Point 8: Business needs to internalise the risks of non-compliance.

It should be immediately obvious from the above that CITES in its current incarnation ticks the box on most of these regulatory failures. It suffers from a chronic lack of funding, it has only been reviewed once in its 45-year history, political interference is central to its decision-making mechanism, business has no need to internalise the risks of non-compliance and data collection is neither timely, comprehensive nor of useful quality.

One could argue that CITES is not a regulator, but just a multi-national convention that commits signatory countries to create effective national regulators and enforcement. That argument flies in the face of how international standard setting works in most industries. Whether in the case of intellectual property rights (WIPO) or car design rules (UNECE WP.29), national bodies follow the rules created by these multi-national standard setting agencies. CITES is the rule-setting body, therefore it plays the role of the regulator. **It even dictates what agencies governments have to create (Management and Scientific Authority) and which ones governments don't need to create (Enforcement Authority).**

The Proposed Regulatory Framework

To address the key issues and regulatory failures of the current CITES model, the proposed new regulatory framework for CITES is comprised of the following basic building blocks:

1. The Precautionary Principle (which means whitelisting or positive lists).
2. A secure funding stream by making business pay the cost of regulation.
3. One species, one application (joint listing applications by producers and importers).
4. A centralised standard setting body and a less political decision mechanism.
5. End-to-end regulation and real-time monitoring of all trade.
6. Incorporating a commons management approach and non-human rights.

The reasons for adopting the Precautionary Principle as a basic building block were outlined at the start of this section. As discussed there, using the Precautionary Principles for industry regulation is nothing new and we can learn from those industries. Adopting it has three major consequences:

1. The default for any species becomes no trade, and
2. To enable trade, an application for trade needs to be submitted and approved, and
3. The burden of proof of sustainability and 'no harm' lies with business.

This is no different to what is already standard practice in pharmaceuticals and for aircraft and their components. The regulatory regime shifts from blacklisting (with all its issues discussed above) to **whitelisting (also called 'positive lists' or 'reverse listing').** Transitioning CITES to use the Precautionary Principle and positive lists also opens the door to **industry covering the cost of regulation**, as now businesses need to submit applications for trade (which attracts fees).

In the proposed framework, in addition to **application fees**, business will also have to pay ongoing, **annual listing fees** based on the value of the trade in a species. In combination these fees will be set so that they cover not just the work of processing applications, but also monitoring and enforcement (which is done mostly by national

History of Reverse Listing

In 1981 Australia submitted a proposal to study the reverse listing model to the 3rd CITES Conference of the Parties in New Delhi [55]. The proposal highlighted the concern that for too many species there wasn't a 'sufficient level of knowledge, management and control to ensure that the proposed trade will not threaten the species survival'.

The same situation persists today, only on a much larger scale. For example, for the pangolin, considered the most traded mammal on the planet, we still have next to no knowledge about population sizes, trade volumes and absolutely no management or control.

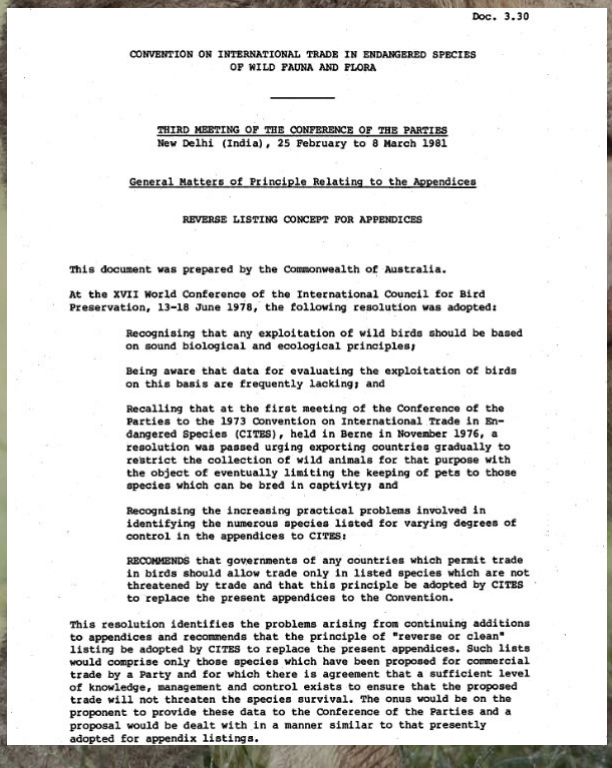
In addition, the Australian proposal correctly recognised three decades ago that the continuing addition of species to the appendices under the direct listing model would lead to immense practical difficulties in identification and enforcement at customs, especially given the fact that many species are very similar in appearance and not easy to distinguish.

Whilst Australia's original proposal was adopted, the subsequent study of the reverse listing model did not result in further action. This can be understood based on the Cornell paper from 1982. Looking solely from a 1982 perspective the problems Australia was foreseeing where simply not yet 'big enough' to warrant action.

In 1982 Martin Ditkof published a paper assessing the Australian reverse listing proposal [56]. His core argument in rejecting the 'major adjustments' that would be required to CITES procedures and national implementations was centered around the fact that a lot more species (he estimated 10,000) were being actively traded than being listed for trade restrictions (700 at the time). This to him meant an increase in complexity for no immediate benefit.

While Ditkof acknowledged that the reverse listing approach would shift the burden of proof that a shipment is legal from customs to the exporter/ importer, he asserted that implementing the reverse listing system would not be practical because it would involve listing over 9,000 species. Today, CITES maintains that its black-listing model is still practical despite listing nearly 39,000 species!

His primary argument against adopting reverse listing was that changing the convention would not necessarily improve its effectiveness and would divert its limited resources of time and money away from its core objective of protecting species. He was talking about the time and money dedicated to monitoring 700 listed species and the effectiveness of protecting them. With nearly 39,000 listed species today Marty has changed his mind, as can be seen from his correspondence with us:



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CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

THIRD MEETING OF THE CONFERENCE OF THE PARTIES
New Delhi (India), 25 February to 8 March 1981

General Matters of Principle Relating to the Appendices

REVERSE LISTING CONCEPT FOR APPENDICES

This document was prepared by the Commonwealth of Australia.

At the XVII World Conference of the International Council for Bird Preservation, 13-18 June 1978, the following resolution was adopted:

Recognising that any exploitation of wild birds should be based on sound biological and ecological principles;

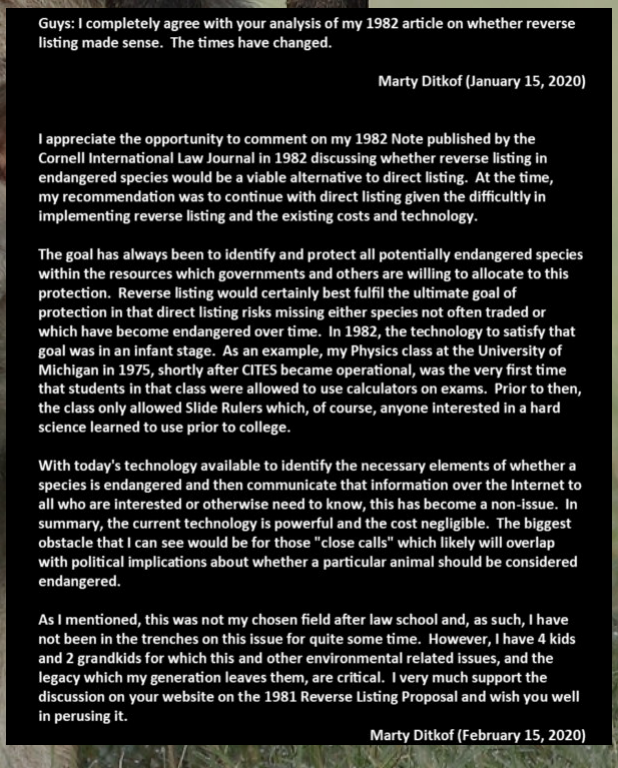
Being aware that data for evaluating the exploitation of birds on this basis are frequently lacking; and

Recalling that at the first meeting of the Conference of the Parties to the 1973 Convention on International Trade in Endangered Species (CITES), held in Berne in November 1976, a resolution was passed urging exporting countries gradually to restrict the collection of wild animals for that purpose with the object of eventually limiting the keeping of pets to those species which can be bred in captivity; and

Recognising the increasing practical problems involved in identifying the numerous species listed for varying degrees of control in the appendices to CITES:

RECOMMENDS that governments of any countries which permit trade in birds should allow trade only in listed species which are not threatened by trade and that this principle be adopted by CITES to replace the present appendices to the Convention.

This resolution identifies the problems arising from continuing additions to appendices and recommends that the principle of "reverse or clean" listing be adopted by CITES to replace the present appendices. Such lists would comprise only those species which have been proposed for commercial trade by a Party and for which there is agreement that a sufficient level of knowledge, management and control exists to ensure that the proposed trade will not threaten the species survival. The onus would be on the proponent to provide these data to the Conference of the Parties and a proposal would be dealt with in a manner similar to that presently adopted for appendix listings.



Guys: I completely agree with your analysis of my 1982 article on whether reverse listing made sense. The times have changed.

Marty Ditkof (January 15, 2020)

I appreciate the opportunity to comment on my 1982 Note published by the Cornell International Law Journal in 1982 discussing whether reverse listing in endangered species would be a viable alternative to direct listing. At the time, my recommendation was to continue with direct listing given the difficultly in implementing reverse listing and the existing costs and technology.

The goal has always been to identify and protect all potentially endangered species within the resources which governments and others are willing to allocate to this protection. Reverse listing would certainly best fulfil the ultimate goal of protection in that direct listing risks missing either species not often traded or which have become endangered over time. In 1982, the technology to satisfy that goal was in an infant stage. As an example, my Physics class at the University of Michigan in 1975, shortly after CITES became operational, was the very first time that students in that class were allowed to use calculators on exams. Prior to then, the class only allowed Slide Rulers which, of course, anyone interested in a hard science learned to use prior to college.

With today's technology available to identify the necessary elements of whether a species is endangered and then communicate that information over the Internet to all who are interested or otherwise need to know, this has become a non-issue. In summary, the current technology is powerful and the cost negligible. The biggest obstacle that I can see would be for those "close calls" which likely will overlap with political implications about whether a particular animal should be considered endangered.

As I mentioned, this was not my chosen field after law school and, as such, I have not been in the trenches on this issue for quite some time. However, I have 4 kids and 2 grandkids for which this and other environmental related issues, and the legacy which my generation leaves them, are critical. I very much support the discussion on your website on the 1981 Reverse Listing Proposal and wish you well in perusing it.

Marty Ditkof (February 15, 2020)

authorities). Processing of applications will be professionalised and centralised under this model, by creating a **CITES Listing Authority (CLA)**. The CLA sets the rules for listing applications and evaluates the proposals based on those rules. The CLA may be one entity or split into regional entities, its functions and potential structure is described further in Section 10.

To make sure that the applications and fee paying are equitable, businesses will be forced to submit **joint applications**. This is similar to what is implemented in the European Chemicals Agency REACH framework and deals with the fact that there are a large number of species traded that involve many different businesses in many different countries. Joint applications eliminate free-riding, make sure exporters and importers work together and share the cost of creating listing submissions. It also keeps the number of listing applications manageable by eliminating duplication.

Forcing joint applications between producers/exporters and importers/final manufacturers goes a long way towards addressing the inequities in value extraction currently present in the trade. If listing proposals were up to producers/exporters only, then poor and developing countries would again be penalised. Under the **'one species, one application' rule**, the companies in wealthy importing countries have to share the burden (and in all likelihood pay most of the costs).

By shifting the burden of proof that the proposed trade will be sustainable and cause 'no harm' onto business and by forcing joint applications all businesses involved in the trade will have to internalise the risk of non-compliance. Because **applications for listings will have to include a compliance mechanism** in relation to tagging/tracing and preventing the laundering of illegal items into the supply chain, businesses will have to design these systems upfront and implement them across the full supply chain.

To assist businesses in being compliant and to eliminate duplicate efforts for building systems for tagging, tracing, reporting and the like, two further centralised authorities will be created in the proposed framework:

- A **CITES Compliance Authority (CCA)**, and
- A **CITES Monitoring and Enforcement Authority (CMEA)**.

The respective roles and functions of these authorities are covered in Section 10. The CMEA assists national authorities in the monitoring and enforcement of CITES trade. This consists mainly of timely and comprehensive data collection and reporting, developing tools and strategies to keep the trade legal and setting up practical and effective cooperation with other entities involved in combating the illegal trade (WCO, UNODC etc).

The CCA is responsible for the **end-to-end regulation of supply chains**. It will establish registration and (where deemed necessary) certification criteria for businesses involved in the CITES trade. It either provides or approves the compliance mechanism for each species and the derived products. Examples include the use of micro-chipping, individual tagging, batch tagging, real-time tracing, biosecurity inspections/certificates and similar measures that keep supply chains legal, sustainable and safe.

The CCA has considerable powers under the proposed scheme. It can issue **warnings and enforceable undertakings** to businesses for non-compliance. If these warnings and undertakings do not result in the desired changes within the stipulated time frame, **the CCA can temporarily suspend the trade in a species**. It can also **delist registered businesses** for non-compliance or alter their certification requirements. The CCA cooperates with national compliance agencies, but has powers that go beyond them to account for the fact that many businesses operate in more than one country.

It is further proposed to future-proof CITES by allowing the incorporation of both commons management principles, biosecurity considerations and non-human rights into the listing criteria for select species. This will lead to **a new Appendix I**, which is described in Section 5.

Section 5

The Precautionary Principle in Practice

The industry with the most stringent application of the Precautionary Principle in regulation is pharmaceutical drugs (both for human and veterinary use). The FDA (Food and Drug Administration) in the US and the EMA (European Medicines Agency) in the EU are probably the best-known examples of regulators in this space. Because the EMA is a supra-national regulator, it makes for a better suited example in relation to the proposed CITES regulatory framework. It should be noted that the way the EMA works is unique because EU legislation requires that each Member State operates to the same supporting framework of rules such as 'good manufacturing practice' and 'good distribution practice' which apply to all manufacturers wanting to market their medicines in the EU [57].

The EMA operates as a decentralised scientific agency and its main responsibility is the evaluation and supervision of medicines for human and veterinary use. More specifically, it coordinates the evaluation and monitoring, working with the national regulators in the 27 member states of the EU and the 3 members of the EEA. Its 36-member board consists of representatives of each of the 27 Member States plus representatives of the European Commission, European Parliament, patients' organisations, doctors' organisations and veterinarians' organisations. It has no industry representation [58].

The Agency decentralises its scientific assessment of medicines by working through a network of about 4,500 experts throughout the EU. It employs

900 staff and has an annual budget of ~€350 million [59].

Of the €350 million the EMA receives in revenue, 90% comes from industry fees. The fees are substantial and cover all aspects of the application process, variations to listings, inspections, annual fees, scientific advice etc. [60]. For example, the basic fee for a new application for a drug is €296,500 (US$356,000). This is for just a single strength (dosage) or pharmaceutical form (pill, liquid, injection etc.) of the drug. Every additional form or strength attracts additional fees. Ongoing annual fees for a single form/strength are €106,300 (US$128,500). As companies will often require scientific advice from the agency before/during the application process, the fees for obtaining such advice are also laid out. They range from €44,400 to €89,000 for initial scientific advice, with further fees for follow-up advice. Overall, the comprehensive fee schedule is 86 pages long and the basic message to industry is – no matter what, you pay.

The EMA does not make binding decisions on the marketing of the drugs it evaluates, those decisions are made by the European Commission based on the scientific recommendations delivered by the EMA. To approve a medicine for human use, an evaluation is carried out through the Committee for Medicinal Products for Human Use. If the Committee concludes that the quality, safety and efficacy of the medicinal product is sufficiently proven by the business that submitted the application, it adopts a positive opinion. This is sent to the European Commission to be transformed into a marketing authorisation valid for the whole of the EU. The Committee is obliged by the regulation to reach decisions within 210 days [61].

The burden of proof fully rests with the pharmaceutical companies and their partners which design the products and conduct the clinical trials in line with the process mandated by the EMA through its Standard Operating Procedures [62]. The EMA receives around 100 applications for initial evaluation per year.

The EMA has the mandate and authority to conduct inspections to check compliance with good practice in the clinical development, manufacturing and distribution, and safety monitoring of medicines. It further collects ongoing data on the safety of already approved medicines. All suspected side effects that are reported by patients and healthcare professionals must be entered into EudraVigilance, an information system operated by EMA. These data are continuously monitored by EMA and the Member States in order to identify any new safety information and to take remedial action if required [63].

What This Means for CITES

Whilst the above is only a very condensed summary of how the EMA regulates medicines in the EU, what is important to consider in how the EMA works in relation to modernising CITES is that the scale of the trade is similarly large and the number of medicines the EMA supervises is a whole order of magnitude larger than the number of species currently listed by CITES (500,000 vs. 38,700). This means it is a valid agency and regulatory framework to learn from.

It should be noted how labour intensive the evaluation of medicines is – the EMA has 600 staff in its Secretariat and draws on 4,500 experts in member states to evaluate 117 applications (in 2019), of which it rejected 41 [64]! Whilst CITES also has a network of experts it could draw on; it would not currently have the scale to process the likely hundreds of applications for trade it would receive upon changing to a whitelisting approach. This means a transition plan would need to be put in place.

It should further be noted that 90% of the EMA's revenue comes from industry fees, creating a secure funding stream independent of government budgets and voter priorities. It might be argued here that the pharmaceutical industry is very profitable, so can 'afford' a high regulatory burden. Yet it was the EU Parliament that noted that 'the trade in endangered species is one of the most lucrative trades in the world' [65]. Most of the products derived from endangered species are luxury items because of their rarity and high status and the luxury sector is extremely profitable [46].

When considering budgets and government priorities in comparison to CITES, national authorities for medicine regulation in EU member states are much better resourced than CITES Scientific Authorities, so more funding would need to be raised centrally in the case of CITES. It is also likely that it would be beneficial to have regional hubs of the proposed CITES Listing Authority, to maintain a manageable scale and to better facilitate access to national authorities and regional experts.

What cannot be underestimated in this comparison is the role of supporting legislation and harmonisation other EU rules and regulations play in keeping the market for medicines safe. Manufacturers and distributors have to adhere to common standards, even if they are not located in the EU. These schemes require certification of manufacturers and enable inspections to ensure ongoing compliance. This creates a comprehensive regulatory framework, with a high degree of transparency.

To summarise: Viable, large scale regulatory frameworks based on whitelisting for market access exist and can provide useful input into designing a new framework for CITES. Such frameworks can be largely funded by industry and yet keep industry at arm's length.

Incorporating state-of-the-art data collection and information systems helps with monitoring, enforcement and maintaining public confidence.

A Hypothetical

Imagine we live in a world where, when a pharmaceutical company creates a new drug, it doesn't have to test it in the lab, it doesn't need to do human trials and it doesn't need regulatory approval. A new drug is simply developed, manufactured and then legally sold.

Once on the market the drug appears to have some terrible side effects and consequences. The groups concerned about the negative effects of this new drug on human lives then must scrape together funding, from donors, to undertake research to show their concerns are valid. Each year, for several years, data is collected from all regions of the world highlighting the negative side effects of the drug. This includes the number of direct and indirect deaths associated with the drug.

The amount of research done is highly dependant on donor funds. While researchers would prefer to investigate the drug's impact on all the types of people who use it, for example men, women, children and teens, senior citizens, people with a disability, people with mental health issues, they know that donors have a preference for funding certain groups they feel more empathy for e.g., children and pregnant women. It is hard to get funding for groups who donors struggle to emotionally connect with.

When these concerned parties present their findings on the negative effects of the drug, they are challenged to provide evidence-upon-evidence-upon-evidence to back up their concerns, yet the pharmaceutical company isn't held to the same standards to provide evidence that the drug is safe.

Imagine further that the system that monitors the trade and distribution of this drug (and all drugs) and is supposed to keep illegal and counterfeit drugs out of the legal market is an old paper-based system that doesn't integrate with customs and has been constantly shown to have significant loopholes used by traffickers.

In addition to this, stakeholders come together to review the outcomes associated with the trade in this drug only once every three years. Trends on the negative side-effects of the drug and the mortality rates are tabled. There are clear indications that the trade in this drug is not safe for humans, but the only result is that another 3 years of research is requested, before a decision may be made to stop selling the drug – the can is kicked down the road.

Add to this, there are 39,000 drugs listed for sale (approximately 39,000 endangered species are listed under CITES for trade restrictions).

Would society let human lives be treated in this way? Would we give the pharmaceutical industry unrestricted ability to trade (or maybe have some minimal restrictions on trade) until, after decades of research demonstrating the drug is unsafe to the human population, we clap with relief when, once-and-for-all, we finally get agreement to ban the trade in this drug? (This was the reaction in the room when pangolins were listed on CITES Appendix I at CITES CoP17).

Again, I ask the question, would we be willing to compromise people's safety and survival in this way? No, of course we wouldn't, because it would be a ridiculous approach, right? But we accept this VERY system for the trade in endangered species.

While the pharmaceutical industry has to apply the precautionary principle, paying for years of research up front, to show that a drug is safe for human consumption, in contrast, the default for the world's endangered wildlife and plants is unlimited trade first until it is proven to have severe, negative consequences for the survival of the species. By then it is often too late.

Section 6

A New Appendix I - No Commercial Exploitation

As outlined in Section 4, the cornerstone of the new CITES regulatory system will be positive lists (the new Appendix II), which are described in detail in the next section. Yet at the same time, transitioning to whitelisting would only solve part of the problems with the current regulatory framework. It would do nothing to change the 'national sovereignty' basic building block and it would ignore the evolving desire for a commons management approach and for protecting certain species on the basis of non-human rights considerations (which include questions of ethics and sentience).

It is therefore proposed to allow such considerations to be considered by creating a new Appendix I for species afforded the highest level of protection. In contrast to species not listed on the positive list (the new Appendix II), which simply cannot be traded across international borders, this new Appendix I offers options for complete protection from any form of commercial (and even educational and scientific) exploitation, in all signatory countries.

This means the protections in this case extend beyond trade and even beyond regulating domestic markets. It could cover all aspects of private property 'rights' over a select number of species and therefore outlaw captive breeding, harvesting, cultivation, hunting, trade, keeping in captivity, use in medical and scientific research and the trade in any derived products. In contrast to the new whitelisting model for trade, the new Appendix I uses a blacklisting model. Given the arguments against blacklisting that we outlined in

Section 3, the number of species on this Appendix needs to be very small.

Because such a system of protections is going to be controversial at first, both the listing criteria and the level of protections offered need to be relatively flexible and allowed to evolve in line with shifting public opinion. Hence listing criteria need to be reviewed and amended regularly, which should be stipulated in the new articles of the convention. In the first instance, listing criteria might include the three different categories outlined below.

We include a couple of examples of species that might be afforded protection under these categories for illustrative purposes only. The aim is to showcase the flexibility of listings and protections that could be offered, not to preempt the actual formulation of listing criteria.

Non-Human Rights Category

The first category would cover an acknowledgement of non-human rights afforded to a species, in the case of animals this would most likely be in conjunction with a consideration of sentience and/or emotional distress caused by captivity.

Examples for species considered under this first category would likely include the keeping of primates, elephants and dolphins in captivity, including in public and private zoos and entertainment venues (theme parks, circuses). This would mean that all signatory countries would have to pass domestic legislation to outlaw the keeping of these species in captivity, with transition arrangements for animals currently being kept.

It would further outlaw any trade in such species and its derivative products, for any purpose, including any form of domestic trade in signatory countries. This would need to be done to discourage the illegal trade and the illegal keeping of listed species. It might further include restricting the use of these species in advertising, for example by prohibiting imagery that implies the animal is held captive or behaves like a domestic pet.

It might also include the protection of all/some habitats of such species, irrespective of where they are located. That in turn means that the costs of establishing such protected areas and the considerations of land ownership/rights are part of the listing process, both of which are discussed further below.

Global Cultural Significance Category

A second category that may be considered for new Appendix I listings would be based on cultural significance for species that are deemed to have such iconic status in many or most countries. Examples might be lions and eagles, which tend to have cultural significance both over long historical periods and across many countries and cultures. The cultural significance might be in relation to their symbolic status, religious status, cultural significance and their link to power or prestige.

This category will likely have potential overlap with the nun-human rights category for these listings, applications should not be considered mutually exclusive. The difference to the non-human rights category is that here the primary aim is not the elimination of holding animals in captivity, but the preservation of wild populations.

To eliminate demand for wild specimen, listings under the global cultural significance category would likely outlaw all commercial activities involving live animals and derived products. This would include the cessation of trophy hunting, captive breeding and the pet trade in the case of lions, as well as the keeping of lions in captivity for commercial gain.

For eagles such a listing would require all signatory countries to make the killing of eagles illegal in domestic law and to establish suitable protections from secondary threats, such as pesticides.

As in the case of the non-human rights category, protections would have to be established for remaining viable wild populations, of which there are only a handful in the case of lions.

Biosecurity Category

The third category would consider listings on the basis of unacceptable biosecurity risks especially in light of future pandemics of zoonotic origin. Select species of bats would probably currently be the prime candidates for a listing, giving the SARS-COVID-2 virus most likely originated in bats. The difference between not approving a listing on the new Appendix II for a species on biosecurity risk grounds and the inclusion of the species under the biosecurity category on the new Appendix I is that the latter can also ban any domestic trade or the keeping of animals in captivity.

The biosecurity category may not outlaw all activities related to the species, for example it might still permit the keeping of animals for medical and scientific research under tightly controlled conditions in line with biosecurity risk considerations.

This category may also include the protection of habitats and the halt/reversal of human encroachment into such habitats to minimise the risk of human interaction with the species. The commons management and funding questions related to enabling such restrictions are discussed below.

It might also be useful to expand the biosecurity category to be able to impose conditions on the breeding or harvesting of animals approved for trade by an Appendix II listing. For example, a concurrent listing on Appendix I and II for minks could impose strict biosecurity conditions on all captive breeding operations given that minks are in the same family as ferrets, which are the laboratory animal of choice for studying respiratory diseases and their cures in humans.

Denmark culled its entire farmed mink population of 15 million animals during COVID-19 due to outbreaks in breeding facilities and the Danish government is paying farmers US$3bn in compensation for destroying the animals [66]. This equates to US$535 for every adult and child in Denmark, a staggering sum dished out without any accompanying demand to change the farming practices.

Given outbreaks of novel zoonotic respiratory diseases are now common (SARS, MERS, SARS-COVID-2), it would make sense to apply biosecurity and biohazard provisions to all captive breeding facilities of species prone to catch and transmit such diseases.

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Commons Management and Funding

Because the new Appendix I uses a commons management approach, funding issues and 'encroachment' into national sovereignty will present problems in relation to getting acceptance of listings under any of the categories. This means a system will need to be put in place that alleviates both concerns to some degree, whilst preserving the option to offer such wide-ranging protections to select species.

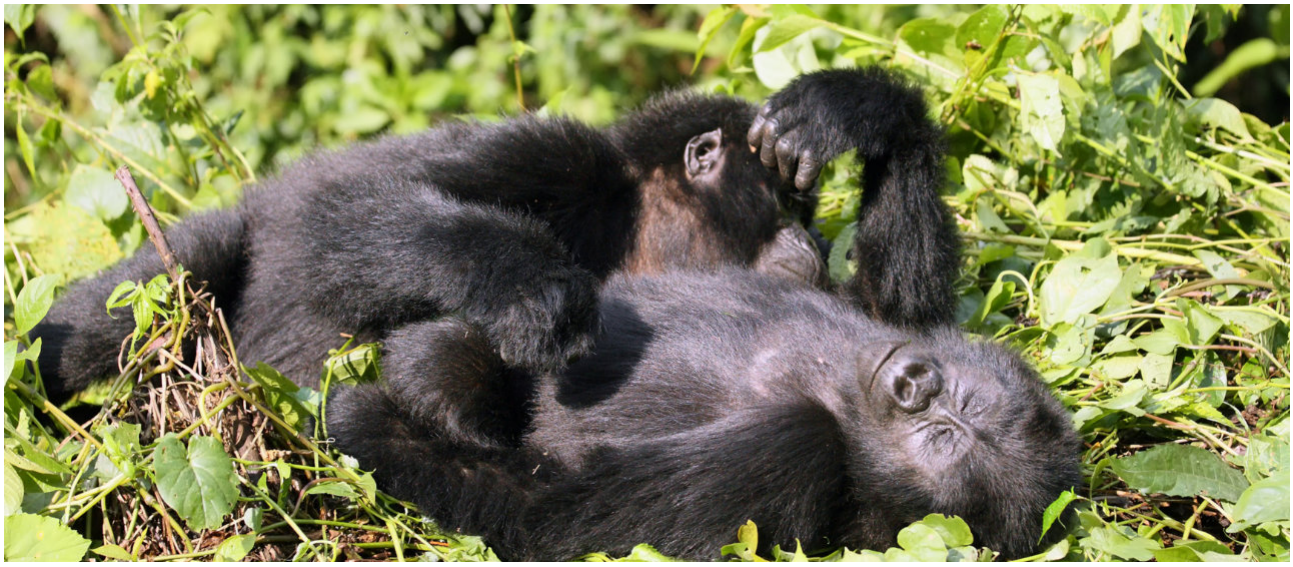
To illustrate how this may work, consider that just because mountain gorillas are now only found in Uganda, Rwanda and the DRC does not mean that these countries have to shoulder the costs of protecting their habitat if that is part of a new Appendix I listing. It would be up to CITES to both create and finance a protection and management plan for such a species.

In some cases the only way of creating appropriate protections for natural habitats under new Appendix I listings will require the establishment of new or expanded protected areas, with all the associated consequences for people living in/ around the area. In such instances host countries would have to be afforded a qualified opt-out clause or long transition periods.

Because the new Appendix I is based on blacklisting, the protections afforded cannot be directly financed from industry fees. The options here are either to use government contributions, philanthropic funds or to divert some of the fees raised from industry for new Appendix II listings.

A better option might be the use of 'image rights' to finance all new Appendix I listings – images of iconic species are used extensively in advertising, movies and TV and affording these species non-human rights might include assigning them intellectual property rights on their likeness. This in turn would enable the charging of licensing fees for using their image in commercial activities. This is system already in common use for sport stars.

The image rights idea has already been implemented as a voluntary initiative for the advertising industry in the form of the Lion's Share Fund [67]. This initiative could provide the template for a comprehensive use of 'image rights' to finance even large scale property acquisitions for new protected areas if needed and could also be used to pay a basic income to populations in surrounding areas to make sure that local communities benefit as well [68].



Listing Applications and Evaluation

In contrast to new Appendix II listings which are submitted by business, applications for listings on the new Appendix I can be submitted by both governments and NGOs. This gives NGOs a more explicit role in the new CITES, beyond the observer status afforded to them under the current system. As NGOs often represent both public interest and evolving public opinions earlier than governments, including them in this fashion would seem appropriate given the nature of the proposed new Appendix I.

In order to separate the evaluation of new Appendix I listing proposals from the very different 'listing for trade' applications under the new Appendix II, a separate Committee should be created for setting the application standards and the evaluation of proposals. This Committee would not be made up of biologists and ecologists, but of experts with a much broader set of skills and experiences. For example, it would likely include lawyers, historians, anthropologists, experts on culture, religion and mythology, polling experts, experts on animal psychology, veterinarians and experts on zoonotic diseases.

To create listing standards and to protect the Committee and the evaluation process from capture by vested interests (who will have to get a say as part of the evaluation process), it will be necessary to actively canvass public opinion of such listing proposals. It will also be necessary to conduct all hearings in public and to publish all documents, creating 'radical transparency' to avoid claims of bias, conflicts of interest or cultural imperialism and so on.

Listings under the non-human rights and cultural significance categories suffer from the curse of the 'silent majority'. For example, vested interests such as zoos and entertainment venues could be very outspoken in defence of keeping these animals in captivity, but the public, despite happily going to see them in zoos or theme parks, is actually open to their plight and willing to act if given the opportunity. This became obvious in the case of the Blackfish documentary and the resulting public backlash against the keeping of orcas by Sea World [69].

Nature Needs More are not experts on the precise nature of how listing proposals and evaluations for this new Appendix I should be structured. To us the key consideration is to open the door to wide-ranging protections on the basis of non-human animal rights and cultural considerations. If lions disappeared from the wild, because we could not agree on meaningful action and the protection of remaining habitats, how stupid would humanity look? Is the mass-breeding of lions in captivity for entertainment, the pet trade and canned hunting really the best use of one of the most iconic species on the planet?

It would appear that even the South African government, until now a staunch supporter of the lion captive breeding and canned hunting industries, has realised that supporting and promoting such practices is incompatible with its broader branding as a ecotourism destination [70].

Section 7

A New Listing Model for Appendix II – Positive Lists

The new Appendix II implements the whitelisting model for the trade in wild flora and fauna. It is based on the Precautionary Principle and requires up-front proof of the sustainability of the proposed trade together with a detailed species management and risk management plan. In contrast to the current model of Appendix II listings, this is a much stricter regulatory approach which puts the burden of proof on those profiting from the trade - business.

The current Appendix II listing process works pretty much on a ***'list and hope for the best'*** basis. The national scientific authority produces a non-detriment finding (NDF, for which there is no binding standard for either scope or quality [71]), establishes an off-take or trade quota and then businesses can trade in the species with no or minimal oversight (other than applying for export permits). CITES rarely checks on if or how the management plan for the species is being followed and to what degree any illegal trade undermines the sustainability of the approved legal trade. It also does not independently check and re-check if the claimed stock numbers bear any resemblance to reality, as population data and actual offtake levels for most species simply do not exist [72]. Generally, no new funds are made available for trade monitoring and scientific sampling, the most common approach appears to be to rely on 'self-regulation' by industry.

In theory the current NDF process should provide all the information to produce a detailed management plan and set enforceable quota for off-take and/or trade. The guidance for producing

NDF documents developed by NGOs can be quite comprehensive [73], but the question 'who pays?' for all this information gathering and monitoring is never even posed, so it does not have to be answered. By ignoring the fundamental flaw in the current approach, CITES gives the impression of relying on scientific guidance without being able to offer any proof. **It is therefore imperative that the question of 'who pays?' is centre stage in the new Appendix II process,** with listing fees paid by business to cover the expenses of monitoring and enforcing compliance with trade rules and quota.

It would serve well to remember at this point that even for the most discussed and highest profile CITES species, the African elephant, no population census existed until a billionaire, the late Paul Allen, funded a population survey in 2014 [74]. **If CITES cannot commission a census of its own signature animal, what chance do less iconic species, such as pythons, orchids and cacti, have?**

This is the main reason why the burden of proof needs to shift from NGOs, philanthropists and governments to those profiting from the trade. As mentioned prior, the trade in endangered species is a luxury trade, nobody 'needs' luxury seafood, rosewood furniture or a python skin handbag. As such, the industry can afford tighter regulation and having to pay for it. By implementing a 'joint application' process as described below free-riding by businesses can be eliminated and the financial burden will have to be shared by all businesses involved in an application for trade.

This burden of proof becomes essential to preventing both intentional and accidental harm, and not just to the species in question, but also to the ecosystem in which it resides. What the trade in wild flora and fauna has in common with say the similarly regulated trade in pharmaceuticals and chemicals is that the consequences of allowing it are often unpredictable and, in many instances, only occur far into the future.

This is why in the pharmaceutical industry clinical trials have to be large in scale and take many years. Similarly, chemicals that make it into the human food chain (such as pesticides, herbicides and food additives) will have to undergo testing and long-term trials to ascertain their safety for both humans and other species. In both cases extensive long-term monitoring of any potential harmful effects after marketing authorisation has been granted is a condition of gaining approval.

What is different in the case of wild flora and fauna is that there may not be a second chance if it turns out the claims or assumptions about, say, the species' reproduction rate and population pressures were wrong. Population collapses may well be irreversible and result in extinction, with little ability to correct the mistake. This puts added importance on management plans, risk mitigation plans and monitoring, so that potentially mistaken assumptions can be uncovered and flagged before it is too late.

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Fundamental Principles of the New Appendix II

Before we go into more detail of how the new whitelisting model would work, the summary below lays out the fundamental principles:

1. **Without an approved listing on the new Appendix II the international trade in a species is prohibited.**
2. **Gaining listing approval requires businesses to provide proof that the trade in the species is going to be sustainable** – which includes addressing all the criteria currently incorporated in the NDF plus additional criteria such as risk analysis and management, tagging and identification by customs, tracing of specimens/shipments, enforcement of quota, keeping illegal items out of the supply chain, impact on ecosystem and other species, biosecurity considerations, standards for captive breeding/propagation and their enforcement, assessment of current and future demand and so on.
3. **Listing standards and criteria are set by the CITES Listing Authority (CLA)** and all listing approvals will be conditional on compliance by all applicants with the terms set out by the CLA as part of the approval process. It is up to the CLA to continuously update the listing standards to make sure that all approved trade is and remains ecologically sustainable. The objective is verifiable sustainability of trade, not enabling or prohibiting trade. This means amalgamated measures of sustainability (such as ecosystem health) are as important as species specific measures.
4. **All claims made by the applicants are subject to verification by the CLA and its appointed experts**. This includes inspections of breeding or propagation facilities, monitoring or spot checks of harvesting operations, independently commissioned scientific studies of populations or ecosystem health and any other type of verification deemed necessary by the CLA, the CITES Compliance Authority (CCA) and CITES Monitoring and Enforcement Authority (CMEA). Verification is part of both the application process and the ongoing monitoring by the CCA and CMEA.
5. **All applications for listing are to be made jointly by all businesses involved in the trade of the species.** The CCA will have a registration database which contains all the businesses (see Managing the Transition below) to enable joint applications. The 'core' joint submission is to be made by a 'lead applicant' selected by the businesses. This core submission addresses all the listing criteria that apply to all the businesses equally (population, distribution, biological characteristics, threats, demand, proposed off-take or supply, management plan, trade analytics, trade risk flags etc.) Individual supplementary submissions are required to cover listing criteria that apply to individual businesses (for example on individual quota, harvest monitoring and control, tagging, tracing, risk management, compliance with national legislation etc.).
6. **Applications require the payment of an application fee in accordance with the fee schedule set out by the CLA**. The fee schedule takes into account the volume/value of the proposed trade and the complexity of the application (e.g. based on the number of species and/or derived products included in the application). All fees are paid by the lead applicant on behalf of the joint applicants. Non-payment of fees results in the termination of applications or listings.
7. **The applicants are responsible for all costs associated with producing the required supporting evidence.** The joint applicants enter into a **Cost and Data Sharing Agreement** to maintain equity and transparency and to avoid future disputes over the payment of application fees (including later, additional fees such as for expert evidence or inspections) and the payment of the ongoing annual listing fees. Such a cost and data sharing agreement is legally binding and will have to contain provisions for the entry of new businesses into the trade and the exit of existing businesses.

8. **The CLA makes a final, non-binding recommendation on any application at the end of the evaluation process**. Only the CITES Standing Committee can make a binding determination based on the recommendation by the CLA (or alternatively a separate committee for listing approvals could be created which meets annually).
9. **The listing process is completely transparent.** Listing proposals, hearings, expert submissions and the final evaluation report by the CLA are all made publicly accessible.

Crucial to the working of this whitelisting model is that industry is simultaneously responsible for producing all evidence while being kept at arm's length from the setting of standards and evaluation of applications. This has been demonstrated to be feasible in other industries. The application process remains under the control of the CLA at all times, if the evaluation team asks for more evidence or answers to questions, then the applicants will have to supply them. If the evaluation team deems an inspection is necessary as part of the application process, then the lead applicant has to pay the scheduled fee for such an inspection. If the CLA deems it necessary to conduct public hearings to get input from civil society and/or NGOs, it can set the terms of such hearings and again charge a fee to the applicants.

Because of the large volume of applications and the complexity of the assessments it is assumed that the CLA is going to involve external assessors in the evaluation of listing proposals. These assessors are paid by the CLA and report only to the evaluation team to avoid conflicts of interest. They cannot be the same experts used by the applicants in making the application. The CLA may further conduct a 'peer review' process of the application or conduct expert hearings if there are differences of scientific opinion that need to be sorted out.

The whole application process is time-limited to avoid non-decisions or stalling tactics. This could be done in a similar fashion to what is in place at the EMA (see Section 5) – 120 days for initial evaluation and posing questions to the applicants – Clock Stop 1 – 60 days for evaluation of responses and updated assessment report, resulting in new list of questions – Clock Stop 2 – 30 days for final assessment report. The Clock Stops are designed to give the applicants time to produce the answers to the questions and any additional materials requested by the evaluation team. In the EMA process Clock Stop 1 is 3-6 months and Clock Stop 2 is 1-3 months [75]. We outline a potential model along these lines below.

Joint Applications and Application Process

The application for any new Appendix II listing starts with an expression of intent from one or several businesses. The CLA will inform the applicant(s) of the listing criteria that have to be met, including proving full guidance on the format of the submission, the necessary evidence, the species management plan and the risk management plan. It will require all applicants to register with the CCA in case they are not yet registered and the CCA will provide the applicant(s) with a list of all businesses already trading in the species.

The CLA will inform the applicant(s) of the rules for joint applications and provide a template for the mandatory data and cost sharing agreement that all businesses wishing to trade in the species need to enter into. When completing the data and cost sharing agreement the businesses will nominate a lead applicant, which will pay all fees and manage all communication with the CLA. The data and cost sharing agreement is a prerequisite for making an application for listing.

Given the large number of businesses that can be involved in the trade in any species, it would be impossible for the CLA to manage separate applications. Separate applications would also create compliance issues, as the processes for monitoring, tagging and tracing may not be compatible and lead to discrepancies or even loopholes down the line. This means the proposed positive listing model is going to be more workable in conjunction with a joint application system.

The experience of the ECHA which implemented such a process for the approval of the import and manufacturing of chemicals in(to) the EU [76] shows that without imposing strict guidelines on data and cost sharing on businesses they will in many cases be unable to agree on 'who pays what' and what information needs to be made available to all applicants for an application to succeed. The EU formalised this in Regulation 2016/09 [77].

The demand for a data and cost sharing agreement between all applicants also supports the principle of businesses internalising the risk of non-compliance. Data sharing will allow final stage manufacturers to monitor their supply chains and manage supply chain risks associated with e.g. the laundering of illegal specimens into their supply or mislabelling/misrepresentation by a supplier. This is turn means that part of the monitoring and compliance burden is directly borne by business, which allows the CCA and CMEA to focus on species and businesses of most concern.

The time frame between the initial expression of interest and the submission of the listing

application will typically be 18 months, but could be a short as 6 months in some instances. During that time the applicants will need to produce the supporting evidence and the plans and processes they are going to propose to manage the species, the tracing of shipments, the risks associated with the trade etc. In contrast to both pharmaceutical and chemical companies which are used to having to provide the burden of proof, businesses involved in the trade in endangered species are mostly clueless about any of the above and do not employ the necessary experts to collect the data and create the required evidence and plans. This will need to change, and it will impose an additional cost on business. In the first instance many businesses will resort to hiring outside experts, but over time the large players in e.g. seafood, furniture and fashion will have to bring the expertise in-house.

Because applications are made jointly, parts of the required submissions will be in a joint 'core' submission, supplemented by individual submissions from some or all of the businesses, as required. This core submission addresses all the listing criteria that apply to all the businesses equally (population, distribution, biological characteristics, threats, demand, proposed off-take or supply, management plan etc.). Individual supplementary submissions are required to cover listing criteria that apply to individual businesses (for example on individual quota, harvest monitoring and control, captive breeding/ propagation plan/process, tagging and tracing of shipments, risk management, compliance with national legislation etc.). The exact nature of the submissions will be stipulated by the CLA once the Expression of Interest has been received and will differ for animals vs. plants, captive bred or artificially propagated vs. wild harvesting and so on.

Six months prior to submitting the application the businesses will have to notify the CLA of the submission date so that the CLA can schedule the evaluation and set up the evaluation team (which includes experts from the CCA and CMEA and can also include external experts (ensuring no conflict of interest by using different experts to those hired by business to support their application). Once the evaluation team is in place, the lead applicant can schedule pre-submission meetings to clarify requirements and to help speed up the evaluation process.

Once the application has been submitted and the fees have been paid, the CLA has 120 days for the initial evaluation, which would result in a draft evaluation report and a list of questions for the applicants. After the questions have been sent to the applicants, the clock stops and the applicants have 3-6 months to submit the required answers, clarification and additional evidence that has been requested.

During the next stage of the evaluation, which lasts up to 60 days, the evaluation team will update the assessment report based on the responses from the applicants and schedule any

expert or public hearings, as required. If needed there will be another set of questions and another clock stop, after which the CLA has 30 days to produce the final report and make a recommendation on the listing.

The final report includes the evaluation of the proposal, the scientific opinion of the CLA and the listing conditions as set out by the CLA, CCA and CMEA. Listing conditions include data collection, tagging/tracing, monitoring and reporting requirements. They also include an approved risk management plan and species management plan. In addition, they can include certification requirements for businesses involved in the trade, marketing and advertising conditions, demand reduction requirements and any other measures the CITES Authorities deem necessary to keep the proposed trade sustainable and legal.

At this stage, if their application is unsuccessful, applicants can request a re-examination of the final evaluation and scientific opinion but need to state grounds for appeal. If the grounds are deemed within the appeal guidelines, the CLA will appoint a different evaluation team and re-examine the application in relation to the stated grounds of appeal. No new evidence can be produced during this stage, but additional experts can be involved by both sides. This re-examination results in a new final opinion and no further appeals are possible.

If the final opinion is in favour of a listing for trade, the assessment report and listing conditions then goes to the Standing Committee or a newly formed Listing Committee for final approval/ rejection. A vote takes place to accept or reject the proposed listing, with rejection requiring a 2/3-majority.

If the final opinion is against a listing, no vote takes place. This is necessary to prevent purely political ‘vote trading’ to overturn valid scientific opinion. Instead, the applicants can submit a new application and the CLA is obliged to inform the applicants about what new evidence or what changes to previously proposed plans/processes would be required to address the concerns outlined in the final opinion.

Potential Exemptions

It will probably be necessary to create a less stringent application and approval process for strictly non-commercial trade. In contrast to the current CITES purpose codes, this would only cover publicly funded scientific research, introduction to the wild, law enforcement and personal effects.

The shipment of hunting trophies would be subject to the normal application process for the species as hunting is clearly a commercial activity.

Educational, medical and scientific purposes under the current classification would only qualify for an exemption if the research or educational purpose is publicly funded, and ethically proven to be in the public interest. For example, the use of monkeys in medical research would not be exempt if the research is either fully or part-funded by industry or deemed to not be in the public interest.

Zoos, botanical gardens and travelling exhibitions or circuses would not be exempt from the standard application process as these entities are not sufficiently well regulated to ensure that they do not open up potential loopholes. For example, a substantial commercial trade in exotic pets such as birds and reptiles is currently disguised as a trade between 'private zoos', thus potentially undermining the integrity of the listing system. In addition, there is no clear definition of a 'zoo' and even if such a definition is in place, the requirements, such as for being open to the public, are often non-binding or frankly ridiculous; EU Directive 1999/22 on Zoos requires them to be open to the public for '7 or more days a year' [78].

The overarching objective remains that ALL trade is legal and ALL trade is demonstrably ecologically sustainable. In line with the Precautionary Principle this means that exemptions are to be kept to the absolute minimum and that limits are imposed on any exemptions that are offered. For example, this may result in volume or value limits on personal effects. It would equally mean volume limits on what can be considered a quantity for purely scientific purposes.

Even if exemptions are granted from the full application process, both a tracing process and risk management plan will still be required for such streamlined applications. All trade needs to be fully traceable by the CMEA and subject to a risk management plan that can be verified by the CCA, so that any breaches can result in trade suspensions as would be the case for commercial trade.

Under no circumstances can exemptions be created from the end-to-end monitoring of any trade, all shipments need to be traceable from source to destination to maintain the integrity of the data collection and monitoring system.

Traceability, Authentication and Supply Chain Monitoring

The goal of sustainability of the trade in wild flora and fauna will remain elusive unless all trade becomes legal, so that the listing conditions can be set and verified by monitoring all trade. At present, the illegal trade in endangered species is massive and growing faster than the legal trade, making a mockery of CITES protections and trade quota. Making all trade legal is therefore a key objective of the CITES modernisation agenda. The same objective is also part of the CBD post-2020 global biodiversity framework [79], so incorporating a supply chain monitoring system that ensures legality is critical.

A suitable framework to ensure traceability exists and many examples of batch or individual item traceability have been implemented in other industries (e.g. for pharmaceuticals and food). The framework presented here is based on UNECE Trade 429 (Traceability for Sustainable Trade) [80] and the proposed system for python skin traceability as outlined in CITES AC29 Doc 31.3 [81], which is a document presented to the Animals Committee by GS1, Global Standards One, an international, not-for-profit organisation that develops and maintains standards for supply chains across multiple sectors.

Traceability here means both the ability to trace (monitoring the history of a traceable asset) and track (monitoring the present and future movements of the asset) shipments throughout the full supply chain. Traceability needs to be augmented by authentication, which shows that the traceable asset is genuine. This goes way beyond the current CITES permit process, which only provides limited traceability at border crossings. Whilst CITES permits will be maintained in the new framework, to achieve end-to-end traceability they need to be augmented with at least three widely used standard identifiers:

1. **GTIN: Global Trade Item Number,** a unique 13-digit identifier usually encoded as a barcode for batch tagged shipments, which can be augmented by a **SGTIN** (serialised GTIN) for individually tagged items (using tamper-proof RFID tags for example),
2. **SSCC: Serial Shipping Container Code**, a barcode or data matrix that identifies a logistics unit (such as a package or pallet) for shipment,
3. **GLN: Global Location Number**, a standardised 13-digit location identifier.

Building the supply chain monitoring for CITES on already widely used standards has the big advantage that the IT solutions are readily available, integration with customs becomes easy and data capture can take place using readily available smartphone or scanner solutions.

Instead of only capturing data at border crossings, in the new framework data is captured at every entry or exit point. It starts at the facility that first processes the animals or plants and then tracing continues through every business in the supply chain until the specimen or derived product reaches its final consumer. The generated data is centrally captured at the CMEA to avoid the need for local IT infrastructure in every country and the issues that come with setting up cross-country data sharing agreements. Access to this data is restricted to what businesses and national authorities need for ensuring compliance, with public access governed by suitable FOI provisions and suitable access rights for research scientists external to the CITES authorities.

In addition, CITES export and import permits will be required for all shipments of listed species. All CITES permits will be electronic and verifiable in real time from anywhere in the world. Permits will continue to be issues by national CITES Management Authorities but will be (automatically) verified against listing conditions at the CMEA before they become valid. The CMEA holds a central repository of all CITES permits. Electronic permit exchange between parties in each transaction is managed via access to the central repository at the CMEA. The electronic permit system could be based on and evolved from a global roll-out of the eCITES electronic permitting system currently maintained by UNCTAD [82].

Shipment data generated by the tracing system before a shipment crosses the border are all verified against the permit data at every entry and exit point. This is to ensure that customs pre-clearance conditions are met and no permit issues arise at the border. Customs information at clearance is shared with the CMEA and captured in the tracing database, so that any discrepancies can be detected.

The aim of this system is two-fold:

1. It creates consumer trust in the supply chain and provenance of the final products, and
2. It makes it very hard to launder illegal items into the supply chain.

Given the luxury nature of most of the trade, giving consumers confidence in the legality of the products they purchase is a key differentiator for businesses operating legally, allowing them to recuperate the costs of compliance. This creates an incentive for business to keep illegal items out of their supply chains. Centralised monitoring will ensure that businesses do not try to hide or ignore any discovery of illegal specimens in their supply chains, this is a key role of the CMEA.

End-to-end traceability reduces the opportunities to inject illegally sourced specimens or derived products into the legal supply chain. This is of course still possible, primarily at the first processing stage (before a GTIN or SGTIN is first assigned) or when batches need to get re-labelled due to processing steps that result in a change of GTIN (such as from raw skin to tanned skin and again to shoe/handbag).

No system is going to be entirely tamper-proof, instead the aim is to monitor at many different levels to detect any violations. Illegal harvesting only presents a sustainability problem if limits are only imposed on legal offtake. If limits are also imposed at all entry/exit gates across the processing steps in the supply chain and on final products, the trade can be kept sustainable even in the presence of (limited) amounts of illegal specimens.

The opportunities for laundering of illegal specimens onto legal supply chains can be further reduced by imposing listing conditions that increase trust in the businesses at the most critical points in the processing chain. For example, the initial processor may need to be certified by either national authorities or the CCA, creating the opportunity for inspections and spot checks.

The goal here is not to describe all the potential processes and authentication mechanisms in detail, it is merely to point out that these processes and systems exist in highly standardised forms and can be copied from other industries with only small modifications required to accommodate additional, CITES specific information (such as permit numbers).

Ongoing Listing and Risk Management

In the current CITES framework there is no set process to monitor the effectiveness of an Appendix II listing in actually protecting the species from overexploitation. In the new framework ongoing monitoring of trade is complemented by regular reviews of listings and their conditions. As part of the listing the applicants have to submit a species management plan and a risk management plan. When the listing is approved a schedule for reviews will be set by the CLA in line with the perceived risks and their potential impact. It will probably be necessary to set a minimum review frequency (e.g. every 4 years) and impose stricter review requirements for listings deemed a higher risk.

The review process is essential to ensure that listing conditions achieve the core objectives – proven ecological sustainability of trade and keeping all trade legal. Because of the way the proposed regulatory framework has been designed, reviews will be able to consider a broad range of data and information that are not currently captured:

1. Fully traceable trade information that reconciles with customs data and CITES permits
2. Risk flags and events resulting from the collection of data as part of the risk management plan
3. Species data collected as part of the species management plan
4. Business reports submitted to the CCA as part of registration and compliance requirements
5. Information captured from inspections and spot checks
6. Information captured by (now well-resourced) national authorities
7. Information submitted to the CLA by academic researchers and NGOs

8. Information about changing commercial and consumer interests that effect demand compiled by the CMEA or NGOs.

The last two points imply that all listing reviews include a public component, where academics, NGOs and the general public are invited to submit research (including non-published research) and other evidence of potential issues in relation to the trade that should be brought to the attention of the CLA.

In addition to regular reviews, listing conditions or general listing rules should also set trigger conditions for a full listing review e.g., if a population declines below a certain level or if a certain percentage of habitat is destroyed/altered/polluted by an unexpected event (such as a natural disaster or oil spill or disease outbreak in captive breeding etc.).

As outlined in more detail below, listing reviews can result in new/altered listing conditions, temporary trade suspension and/or a recommendation for cancellation of a listing in severe cases of unsustainability with little chance for remedial action. None of these outcomes should be considered unusual, as the trade in wild flora and fauna involves risks that cannot be predicted or managed and are outside human control. These risks are bound to increase as a result of global warming which will progressively alter ecosystems and habitats, and which will also result in more severe and more frequent natural disasters.

The process of listing reviews and ongoing monitoring is going to be resource intensive, which means a secure funding stream is essential to the successful management of risks. Ongoing, annual listing fees will provide the necessary income to both the CLA and CMEA to carry out their duties in relation to risk management, monitoring and listing reviews. As discussed below, these fees are likely to be set in line with the value of trade and the review schedule.

Part of the ongoing listing management is also the management of businesses either entering or exiting a listing. For example, if a business decides to leave the trade in a species (either voluntary or as a result of bankruptcy or a takeover) it will have to fulfil the exit conditions set by both the CCA and the data and cost sharing agreement the business entered into. Conversely, if a new business wants to enter the trade in a listed species it will have to register with CCA, pay the registration fee, fulfil any entry conditions set out for the listing and sign the data and cost sharing agreement that is already in place for the other businesses engaged in the trade.

Compliance, Fines and Suspensions

A strong compliance regime is a cornerstone of any successful regulatory framework. In the case of the new CITES framework compliance is based on business internalising the risks of non-compliance. This can only happen if non-compliance leads to consequences that have a disproportionate impact on the ability to trade.

We know from other regulatory frameworks that the threat of fines (including huge fines) alone does not create the incentives to fully internalise the risk. That this is indeed the case is immediately obvious from the data on corporate wrongdoing collected by Jon Morse for the US, which found more than 6,300 fines and corporate settlements since 1990 [83]. With many fines exceeding US$100million, it is clear that such fines have no or very limited effects in the case of very profitable businesses. It is critical to acknowledge in this regard, that **in these 6,300 cases none of the business executives went to jail and none of the businesses were suspended from trading. This shows the inadequacy of any regulatory framework purely relying on fines.**

Instead, we are proposing a compliance framework that ranges from fines to the full suspension of trade. Compliance is continuously monitored at two different levels:

1. Individual business compliance for all businesses registered with the CCA in relation to the listing conditions for the species they trade in; and
2. Overall compliance with the approved volume of trade and the conditions imposed to keep illegal items out of supply chains and the trade sustainable.

The CCA has both the obligation and authority to enforce business compliance. This includes compliance with data collection and reporting requirements, compliance with process conditions set out in the listing approval (like harvest levels and harvesting areas or compliance with the approved tagging and tracing process), compliance with the species management plan and compliance with marketing, advertising and demand reduction conditions that may have been imposed. The CCA has the authority to conduct inspections and spot checks, without the obligation to announce such inspections or spot checks prior to them taking place. The CCA may delegate this authority to national compliance authorities or send a central inspection team, depending on the legal framework and severity of potential breaches.

Non-compliance by a business can result in warnings, enforceable undertakings, fines, temporary suspensions of trade in a species, suspensions of business registration all the way to a complete suspension of trade in the species. Suspensions can be temporary until compliance is

restored, or permanent subject to a new listing approval in case of serious breaches that threaten the sustainability of the trade. This range of potential penalties will mean that businesses will internalise the risk of non-compliance. Whilst a business that trades in many different species (such as LVMH or Kering) may be able to tolerate the risk of suspension from the trade in one species, it cannot afford the risk of being deregistered by the CCA, which means it can no longer trade in any CITES listed species.

The responsibility for ensuring compliance with the approved volume of trade and keeping the trade fully legal lies with the CMEA and the national monitoring and enforcement authorities. If the trade is found to be unsustainable due to either too many illegal items entering the supply chains or due to incorrect assumptions having been made during the approval process, or due to changed circumstances for the species (e.g. because a habitat has been destroyed by fire or a coral bleaching event) then the CMEA in conjunction with the CLA can either impose new listing conditions (such as lower offtake), temporarily suspend the trade in a species or cancel the listing altogether (the latter may need to be subject to approval by the Standing Committee). Cancellation means that no trade can take place until a new listing has been approved, forcing businesses to go through the full application process again.

It is important to acknowledge at this point that even in the event of full compliance by all the businesses involved in the trade of a species, events outside anyone's direct control can lead to a trade suspension or drastic reduction in quota. This may be the result of a biosecurity incident, disease outbreak, a natural disaster that affects the population or the result of unrelated human activity (such as land clearing for agriculture or major pollution entering water bodies) or any other event that affects population numbers or previously assumed reproduction rates.

Both the CMEA and the CLA have the responsibility to collect information on potentially harmful events and to evaluate their impact on a species. In addition, businesses will have reporting requirements imposed on them that include reporting on natural disasters, pollution, disease outbreaks etc. that may impact the listing assumptions. Non-compliance with such reporting requirements can lead to fines and suspensions as per the above.

Comparing Positive Lists to the Current Model

The main difference between the current CITES model for regulation and the new proposed framework is in the reversal of the burden of proof. In the current blacklisting model those concerned with protecting species from overexploitation need to make a case for listing the species on the CITES appendices. This simple statement has a raft of immediate implications:

1. The default position is one of unlimited trade (presuming abundance and no harm),
2. Businesses trading in the species do not need to care about CITES beyond obtaining permits,
3. Those with no money (NGOs, governments in poor/developing countries) need to provide the proof that a species is under threat,
4. Listing delays undermine protection efforts (as the trade continues unmonitored),
5. Non-listed species are ignored from a trade perspective, and
6. It puts poor/developing countries at a disadvantage.

The fact that CITES is poorly resourced is not a direct result of the blacklisting model but making business pay the cost of regulation is practically impossible without changing to a model that gives business a direct role in CITES. With governments and the public unlikely to pay any more attention to the legal trade in endangered species, the prospect of government or philanthropic funding increasing by 100 to 1,000 times compared to what is spent now is remote.

If we want to fix the lack of funding and the lack of proper monitoring and enforcement and all the other well-known problems in the current CITES system, **CITES needs to be reformed and businesses need to shoulder the burden of proof and the costs of regulation. Moving to positive lists is not a 'nice to have', it is a necessity if we want trade in wild flora and fauna to become sustainable.**

As with blacklisting, moving to whitelisting has immediate implications:

1. The default position is NO trade (presuming exhaustible stock and potential harm),
2. The framework applies to all species, including those not currently listed,
3. Businesses trading in the species have to internalise CITES compliance,
4. Those with money (businesses) need to provide the proof that a species is safe to trade,
5. Listing delays do not harm protection efforts (trade is not allowed until a listing is approved),
6. If joint applications are used, poor/developing countries are not disadvantaged.

It should further be highlighted here that a whitelisting model with the compliance model outlined in the previous subsection delivers a much more targeted sanctions model compared to the current model of trade sanctions in CITES. Under the current model trade quota and sanctions against whole countries are the only available tools of enforcing compliance. Trade quota are poorly monitored and can be circumvented by 'mislabelling' and exporting via e.g. a neighbouring country. Trade sanctions against a country unduly penalise those who are compliant.

The ineffectiveness of these type of broad sanctions has been known in international relations for a long time and sanctions today are usually targeting individual businesses (Huawei, Nordstream 2) or individuals (such as against 88 individuals in Belarus [84]). Targeted sanctions are much more effective, as Huawei found out when its supply of both semiconductors and software for its mobile phone products was cut off overnight by the US [85].

The framework proposed here incorporates this modern view of sanctions on trade by targeting businesses and making business internalise the risks of non-compliance. The framework further fixes the lack of resourcing for trade monitoring and enforcement by making business pay the full cost of regulatory compliance.

Of course, giving business a direct role in CITES comes with a risk of giving industry undue influence over regulatory processes and outcomes. **This risk is real and needs to be mitigated by keeping business at arm's length from both standard setting and the process of listing evaluations.** The structure and processes outlined above address this risk by copying existing regulators that have not been tarred by regulatory capture by business or similar regulatory failures.

It should further be pointed out that the new CITES framework remains part science, part politics. Some of the most political and emotional species (elephants, lions, rhinos, tigers) can now be dealt with under the new proposed Appendix I, which goes beyond simple questions of trade/no-trade and allows humans to apply different standards to a select number of species that we have a special relationship with or assign a special status to. The political role and ultimate authority of the CITES Standing Committee and the Conference of the Parties is preserved, but well-funded science gets a bigger say through the stringency of the listing process and the centralisation of evaluations into the CLA.

The role of academics and NGOs is vastly enhanced, as their work will be a critical input to all listing applications, evaluations and reviews. The amount of work required by the CLA and its supporting network of experts will result in hundreds (if not thousands) of new jobs being created for biologists, ecologists and other experts.

Channelling billions of dollars from industry fees into research will greatly enhance our knowledge of the natural world, allowing us to collectively gain a much deeper understanding of the biosphere that we depend on for maintaining human civilisation.

Section 8

Funding, Fees and Distribution

In order to achieve the objectives of having ALL trade in wild flora and fauna be legal and sustainable, there needs to be a reliable, adequate funding stream for both the central CITES authorities and the national authorities. In this section we will make an attempt to estimate the level of fees required to achieve these twin objectives without making the fees too high compared to the total value of the trade. Setting fees or levies at 2-3% of the value of a trade to achieve broad-based social and environmental benefits is not considered too onerous for highly profitable industries [86].

To be able to derive suitable fee levels to be paid by business, we need estimates for:

1. The total value of the legal trade in wild flora and fauna,
2. The total value of the illegal trade in wild flora and fauna,
3. The total budget of the new central CITES Authorities (CLA, CCA, CMEA),
4. The budget requirements of the national authorities (Management, Scientific and Enforcement Authority).

The best available estimate for the value of the legal trade is US$350bn for 2016 [87]. Of that, seafood is ~$300bn, furniture is ~$20bn, fashion ~$15bn and the rest includes pets, wild meat, ornaments, jewellery and exhibitions. This analysis was based on examination of the UN Comtrade database, which includes both CITES listed and non-CITES-listed species. The HS codes used to declare goods to customs lack the granularity to accurately distinguish between listed and non-listed species, but excluding clearly farming and agriculture related codes will nevertheless provide

a good estimate of the total trade in wild flora and fauna. **It should be pointed out that the value reported in this paper is derived from the value declared at customs, which is typically much lower than the retail value.**

Because this analysis made efforts to exclude species that are predominantly captively bred or artificially propagated, it may exclude significant trade volumes of CITES listed species and also of species that would be considered as wild under the proposed new CITES regime outlined here. It should further be noted that TCM products are not easy to classify using HS codes, so the multi-billion dollar TCM trade [88] does not feature in this analysis. **Hence this estimate of US$350bn should be taken as a lower boundary of the true value of the legal trade under the new Appendix II regulations.**

When it comes to estimating the illegal trade in wild flora and fauna, there are a few estimates that again can be used to establish a lower boundary for its value. We will use the World Bank report into illegal fishing, logging and the illegal wildlife trade from 2019, which includes two estimates from 2016/17 which both give a range of US$70-200bn [89]. In these estimates 70% is from illegal logging and 20% from illegal fishing. Given the World Customs Organisation put out an estimate of US$100-250bn in 2017 [90], we will assume that US$100bn is a reasonable compromise for a lower boundary.

For the sake of this exercise this means the combined value of the legal and illegal trade in wild flora and fauna was AT LEAST US$450bn in 2016.

This further means that charging fees of 2-3% of the value of the trade would raise at least US$9-13bn per year to regulate and enforce the legality and sustainability of the trade.

Now that we have established that plenty of money can be made available from a reasonable level of fees, we also need to check that US$9-13bn pa is enough compared to what is required.

Since we are proposing a new regulatory regime, it is not straightforward to estimate the amounts required for both the central and national authorities. We will therefore make a handful of assumptions to arrive at an approximate budget. If we assume 10,000 listings on the new Appendix II and that one specialist manages 3 listings on average (applications and reviews), then the CLA will need approximately 4,000 employees (including managers and support functions). This does not include the outside experts that will need to be involved in evaluations of applications and listing reviews. Even if the actual number of listings is much larger, this does not necessarily mean that many more employees would be required, as the ration depends on both the volume and nature of the trade.

The CCA and CMEA will likely need about 500 employees each. The CMEA is mostly staffed with IT experts whereas the CCA has a large number of compliance officers and inspectors. In all three cases the cost of employment is relatively high due to the specialist nature of the work. If we assume a total for all 3 authorities of 5,000 employees and US$120K as the average employment cost, then we arrive at US$600million pa. Adding in business overheads (office rent, IT, travel etc.) and the costs of hiring external experts to support the CLA, the likely total annual budget of the central authorities will be somewhere around US$1-1.5bn. We will assume US$1.5bn to be on the safe side.

The central authorities work with national authorities on compliance, monitoring and enforcement. Whilst the role of the Management and Scientific authorities is not greatly enhanced under the new proposed regulatory framework (apart from adding a business compliance function to each Management Authority), each signatory will need to set up and fund an Enforcement Authority that is up to the task of keeping the trade legal and sustainable based on the level of trade into and out of the country. The funding for this comes from the centrally raised fee revenue. As it is next to impossible to estimate the right level of funding required for this, we will assume that US$5bn per year is the minimum required. This is 20 times the amount spent now (which is clearly completely inadequate), according to a World Bank report from 2018 [91]. It is also 5 times more than the total annual funding budget of the GEF [92]. At the same time, it is still 20 times less than what is spent on fighting the ‘war on drugs’ [93].

Combining the estimated budgets for central and national authorities we get to a total minimum annual budget of US$6.5bn.

This is well below the amounts that can be raised from a 2-3% fee level, as shown above.

It should be noted that this is not going to be anywhere near the actual amount being spent globally, as the costs directly absorbed by businesses are not counted. Businesses will have to pay their own compliance costs, such as implementing tagging/tracing systems, internal controls and monitoring, reporting to authorities and any other costs that relate to listing conditions (which can be wide-ranging, see the examples in Section 11 below).

Now that we have established that in principle it is feasible to create the necessary funding stream to make all trade in wild flora and fauna legal and sustainable, we need to briefly analyse if it is practical to raise this money via application and listing fees as outlined previously.

Obviously, the point here is not to establish actual fees, it is to assess what levels of fees would likely be required to raise US$6.5bn pa and how fees could be structured to be in line with the value of the trade.

We would recommend the consideration of the following fee levels:

Type of Fee	Amount (USD)
Application Fee for Appendix II	$500,000
Application Fee for Appendix I	$250,000
Reduced Application Fee for Appendix II (for non-commercial trade and trade in species valued at less than US$10million pa)	$250,000
Additional Fees for Scientific Advice, Hearings, Appeals, Inspections in relation to Appendix II applications	$50,000-$150,000
Annual Listing Fee for Appendix II	1.5% of the value of the trade
Annual Listing Fee for Appendix II (for trade in species valued at less than US$10million pa)	1% of the value of the trade
Annual Business Registration fee with CCA (3 different levels based on annual turnover in all listed trades)	$1,000 $5,000 $25,000
Annual Business Certification Fee with CCA (for listings that impose certification requirements)	$100,000

It should be noted that the Application fees are joint fees because all listings require joint application as described in Section 7. Reduced fees apply to non-commercial trades as per the list of proposed exemptions in Section 7 and to trades in species where the total annual trade in the species does not exceed US$10million pa.

In contrast, registration fees are charged to each individual business. If we assume 50,000 businesses at $1,000, then 10,000 businesses at $5,000 and 2,000 businesses at $25,000, we arrive at US$150million pa in registration fees. Not many trades will require certification of businesses, so

we will assume just 500 certified businesses, gaining another US$50million in fees.

We accept that the levels of fees outlined will make some very low-value trades in a small number of species nonviable. This may lead to either the trade ceasing or going 'underground', which would need to be addressed by the CMEA and the national enforcement authorities. This potential issue will need to be explored in detail when the framework is designed. It may be necessary to create a dedicated unit in the CMEA to study these trades and the consequences of non-listing before a decision can be made on the best way to prevent this from happening on a significant scale.

If we assume that 10,000 species will get listed on Appendix II and half of those will be low-value or exempt trades, applications fees will raise a total of US$3.75bn over the 10 years or so that it will take to get all the species listed on Appendix II. This means that application fees and the additional fees associated with listings will make up a significant part of the budget for the CLA at least during the first 10 years.

If we further assume that 80% of the value of total trade of US$450bn is in high-value trades (over US$10million) and 20% is in low value trades (less than US$10million), then combined with registration fees the annual listing fees would raise US$6.5bn, in line with what is required based on the assumptions we made in relation to what needs to be raised. Whilst the actual numbers will be different from these estimates, the calculation shows that reasonable fee levels can be set that achieve the regulatory objectives and leave the viability of most trade intact.

We have demonstrated in this section that it is feasible to design a system of fees levied on business that will make the trade in wild flora and fauna both legal and sustainable. It will also be necessary to design a system of distribution of those fees to be disbursed to national authorities and to ensure their use is in line with the core objectives. We would suggest that a custom distribution mechanism is designed based on the level of trade into and out of each country, with a minimum level set to make sure that all signatory countries get enough funding to build and support the necessary infrastructure and resourcing.

We would further propose that this distribution mechanism is administered by a purpose-built facility, called the CITES Distribution Facility (CDF), set up by the Conference of the Parties under the new articles of the convention. The distribution scheme and the spending of national authorities is audited by a dedicated audit team in the CCA. Countries will have to report annually to the CCA on the use of funds and their spending will be audited regularly to ensure money does not get diverted to other purposes.

Whilst the proposed funding mechanism is designed to solve the problem of funding the trade regulation, monitoring and enforcement system, it does not address illegal poaching and harvesting for immediate use (personal, local community) and it does not address the inequities inherent in biomass extraction based on private property rights.

Given that poverty and lack of alternative economic opportunities are key drivers of illegal poaching and harvesting and also of resisting the establishment of protected areas, additional measures need to be put in place to address both. We strongly advocate for a Universal Basic Income linked to Conservation for all populations living in or around protected conservation areas to help overcome these issues [94].

Section 9

Managing the Transition

Given that the new proposed regulatory framework represents a fundamental change from the way CITES and its national authorities currently operate, it will not be possible to put it in place without suitable transition arrangements. These transition arrangements will differ between species listed on the current CITES appendices and species not currently listed on CITES.

We will attempt here to outline some options for possible transition steps, without any claim to fully cover the complexities involved. This primarily includes addressing the data gaps that exist under the current framework so that operations can start up as soon as the new central authorities are in place.

The biggest change under the new Appendix II rules is that businesses wishing to trade have to prepare the application and provide upfront proof that trade is going to be legal and sustainable. The preparation work for such applications is lengthy and businesses currently lack both the in-house expertise and people who could do this preparation work. Hence it will be necessary to stagger the full listing process and adopt 'provisional' listings during the transition.

Further, the requirement for joint applications involves an awareness of all businesses currently involved in the trade of a species. It would currently be impossible to gather this information and it cannot be left up to business to collect it. To address this, a number of preparatory steps can be taken under the old CITES, before the new articles come into force.

Preparatory Steps

Hence the very first step in preparation for the transition would be to set up a comprehensive register of businesses involved in the trade in all wild flora and fauna (not just CITES listed species, but that would be a good start). Such a business register can start at any point in time, as it is going to be beneficial in achieving both transparency and traceability of the trade even before the new framework has been adopted or implemented. We would therefore argue that it should be set up after the review of convention has been completed (see Section 14).

Such a business register could either be set up under the auspices of the UNEP (in a similar way as the CITES trade database is set up as UNEP-WCMC) or it could operate as a separate, global NGO. The most suitable structure will be based on the need to achieve the three key objectives for such an entity:

1. To create a comprehensive database of all businesses trading in wild flora and fauna,
2. To get a better estimate of the value of trade in each species being traded, and
3. To be able to collect fees from businesses across the world to finance its operation.

Because such a scheme would have to be voluntary to start with, there would need to be an incentive for businesses to participate and to pay fees. Apart from governments creating an expectation (or requirement) in their own jurisdictions that businesses do register and submit detailed information on their trade in wild flora and fauna, CITES can also create leverage by stipulating that any business that has not been registered by this entity for at least 1 year by the time the new articles of the convention are adopted will be banned from making Appendix II applications for 5 years.

In addition, such an entity could also provide a 'certification' label for businesses prepared to have the information they submit to the register to be publicly available, and which are further prepared to invest in establishing end-to-end tracking of the species they trade in. This would require paying a higher level of fees so that such information could be verified. In essence such a

certification scheme would help businesses keen on being seen as sustainable and responsible in the eyes of their customers to differentiate themselves and address growing concern in the consumer space about the lack of sustainability in the extraction of biodiversity.

The aim of creating such an entity and related certification scheme is not just to assemble a full picture of which companies trade in which CITES listed and non-CITES listed species and at what annual volume. It is also to create incentives for businesses to start investing in traceability, which is a critical component of both compliance and risk management under the proposed new Appendix II rules. By getting business to invest upfront in traceability it will be much easier to gain listing approvals once the new regime starts operating, so this will be a critical step to preventing delays later on.

To get select businesses to invest in traceability as part of such a certification scheme at the very least strong pressure should be applied to achieve end-to-end traceability for key, high-value species such as exotic skins used in fashion, selected rosewood timbers and some key luxury seafoods, for example. By creating sample processes for the most high-value species in the main trade categories, it will be possible to test tagging and tracing options and arrive at 'standard solutions' before the new regime makes traceability a must have requirement.

In addition to getting businesses prepared, CITES would also need to invest in better data gathering on the existing trade. This means that all signatory countries adopt electronic permits and electronic permit exchange and that the WCMC trade database is significantly upgraded to provide reliable and reconcilable data on both exports and imports (this would mean import reporting has to become mandatory). Moving to electronic permits would create the necessary integration with customs and automated risk assessments for inspections that are a basic requirement to help make all trade legal.

Currently (as of December 2020) only some 15 of the 183 CITES signatory parties have implemented electronic permits and another 25-30 are planning to do so in the near future [95], but implementation completion dates are currently unspecified. Governments and philanthropic organisations will have to provide the funding for the remaining countries that themselves cannot afford eCITES or an equivalent electronic permit system. Agreement on such funding and a global roll-out of eCITES would need to be a prerequisite in preparation for the transition to the new Appendix II regulations.

Whilst the exact steps taken will be subject to debate, it should be obvious that it is possible to aid businesses in their preparation for the new regulatory system by setting up a registration and data collection process that make them take a detailed look at their trade in wild species and their supply chains. By creating a modern permit and data collection system and by introducing traceability for at least high-value species this preparatory phase can go a long way towards making the trade legal and gaining a full picture of the trade.

Transition Arrangements

The transition to the new listing process for Appendix II will likely take about 10 years, as the volume of listing applications needs to be managed in line with the resources available at the CLA and the number of external experts that can be accessed by both businesses and the CLA. The purpose here is not to outline the transition arrangements in detail, **it is to demonstrate that the proposed fee schedule will be sufficient to fund the transition period.**

The most critical element of the transition will be that any existing trade is allowed to continue, as long as businesses register with the CCA, enter into data and cost sharing agreements, adopt minimum traceability and reporting requirements set out by the CMEA and pay annual listing fees in line with the fee schedule.

Because all existing trade is granted a provisional listing so that trade can continue until proper listing applications are submitted, annual listing fees are generated right from the start and funds will be disbursed to all signatory countries that have ratified the new articles. This means during the transition period heavy investments will be made into the transparency of the trade and making the trade legal. The second objective, achieving true sustainability, will only kick in once listing applications are submitted, evaluated and accepted.

The idea of the transition arrangements as outlined here is that trade continues on the basis of 'provisional' listings being created by the CLA without the need for a full listing application. For species currently listed on Appendix II these provisional listings adopt the requirements, NDF conditions, management plans, quota etc. currently in place and add minimum data collection, traceability and reporting requirements set out by the CMEA and CCA.

For currently non-CITES-listed species that are traded internationally (according to the data collected during the Preparatory Phase – see above) provisional listings will be created within 18 months of the new articles taking effect. This additional time is probably needed to make sure all businesses are registered and have entered data and cost sharing agreements. It also gives the CLA time to advise businesses of the scope of a provisional listing (species level or alternative arrangements more suitable to what is being harvested/traded). The provisional listing conditions in this case are constrained to data collection, traceability and reporting.

No provisional listings are created for currently CITES Appendix I listed species. Potential exemptions for strictly non-commercial trade can be put in place for a short period, but ultimately current Appendix I listed species should not be traded, so should not have access to the transition arrangements for commercially traded species.

Because the provisional listing process generates both business registration fees and annual listing fees, the fees collected will be sufficient to fund both the new central authorities and to immediately start the distribution of funds to the national authorities. This means setting up a national enforcement authority will become a mandatory condition in the new CITES framework and a pre-condition for receiving funds. Countries that delay ratification of the new articles or the establishment of a national enforcement authority will not be included in the distribution of funds and additional conditions (or even exclusions) will apply to businesses situated or operating in those countries.

The provisional listings will be time limited based on a prioritisation schedule for full listing applications set out by the CLA and probably developed before the new CLA is fully operational. This prioritisation will likely involve both trade volume/value considerations and the level of extinction risk involved in direct exploitation for trade. Businesses will be invited to submit listing applications in line with the new framework based on this prioritisation schedule. If a joint application is not approved by the time the provisional listing expires, the trade will cease.

All of the above means that during the (probably lengthy) process of negotiating and adopting the new articles priority is given to designing and preparing for the establishment of the funding facility, to creating templates for data and cost sharing agreements for business and driving the business registration process and to designing both the provisional listing process and the minimum data collection, traceability and reporting requirements.

The mantra of the transition stage should be: Making the trade transparent and legal first, sustainability considerations second.

Section 10

The New CITES Authorities

This section will provide a brief overview of the functions and structure of the proposed new CITES Authorities and the associated changes to the existing bodies (Secretariat, Committees, CoP).

We propose that the new regulatory framework is administered by four new authorities:

1. CITES Listing Authority (CLA),
2. CITES Compliance Authority (CCA),
3. CITES Monitoring and Enforcement Authority (CMEA), and
4. CITES Distribution Facility (CDF).

These four authorities will be described in more detail in the subsections below. We envisage that the current Secretariat and its functions will be incorporated into the CCA, as it would seem unnecessary to maintain it is a stand-alone body given its small size.

We further envisage that the Animals and Plants Committee functions will be fully taken over by the CLA, so these committees will be disbanded.

How the operation of the Conference of the Parties (CoP) and the Standing Committee (SC) are going to change will need to be subject to analysis during the process of negotiation of the new articles. Because determinations on listing approvals can only be made by the Standing Committee in the framework we outlined, it should be considered to change the role of the Standing Committee to make listing determinations based on the final advice produced by the CLA. In that case it would need to meet annually or even twice annually, especially during the transition period. Whether its membership and structure will need to be adapted to perform this function will need to be

determined during the negotiation of the new articles.

A lot of the functions currently performed by the SC and CoP are going to be incorporated into the new authorities. Committee II at CoP, which currently reviews listing proposals, is going to disappear altogether, with its function performed by the CLA and SC. A great deal of the work currently done by Committee I will be taken over by the CLA and CCA. For example, budgets will be set by each of the authorities based on fee revenue and approved by the Board. Interpretation and implementation matters will be handled by the CLA, CCA and CMEA or joint working groups set up by the authorities. All species-specific matters will be dealt with by the CLA.

In all likelihood the Conference of the Parties will change in its nature from 'managing' the convention to 'review and evaluate' the working of the authorities and the overall alignment with the objectives of the treaty. Direct governance of the authorities resides with the Boards, so the nature of CoP will need to be appropriate in relation to leaving the governance and decision making to the boards. That would imply that Conferences of the Parties could become less frequent (say every 4 years).

The New Listings Authority

The new CITES Listing Authority (CLA) will be responsible for managing all listing proposals and listings under Appendix I and Appendix II of the new articles of the convention. We would propose that it is split functionally into three committees, respectively dealing with Appendix I listings, Appendix II listings for animals and Appendix II listings for plants. We would further propose that it does not have one central location, but instead is split into 4 or 5 regional offices. With a likely size of about 4,000 employees (based on 10,000 listings and each specialist on average handling 3 listings plus support functions), it would seem more than feasible to distribute it over multiple locations.

The CLA handles all aspects of listing proposals, from the pre-approval of applications to the final recommendation (see Section 7). This includes engaging external experts, creating working groups with the CCA and CMEA for the evaluation of proposals, setting up and conducting hearings, arranging inspections with the CCA, managing the application process and the joint applicants, and writing the interim and final reports to enable the Standing Committee to make a final determination on all applications. It also manages appeals made by applicants on publication of the final report.

The CLA will incorporate all current functions of the Animals and Plant Committees, which will no

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longer be required under the new framework. It will also take over many tasks currently handled by the SC, various Working Groups and CoP, including all species-specific and interpretation matters.

The CLA not only handles listing applications, it is also responsible for conducting regular listing reviews. This includes reviews of data provided by the reports from business, the trade data from the CMEA and compliance information gathered by the CCA. It also collates data supplied by national authorities in relation to species management plans. In the course of conducting listing reviews the CLA may also commission external inputs such as academic studies or population surveys. All of its functions are financed from fee revenue, as outlined in Section 8.

The CLA may further initiate significant listing reviews that request input from broader society, including from NGOs, activists, local communities and the public in general. This may include conducting public hearings, inviting public submissions and undertaking field trips.

In addition, the CLA writes and continually updates the listing and application rules and processes.

It is critical to the success of the new regulatory framework that the CLA operates in a completely transparent fashion – everything is documented and published.

The operation of the CLA is overseen by a board appointed by the CoP. The board should probably consist of representatives of each of the CITES regions that currently make up the Standing Committee and representatives from the likes of UNEP, the IUCN and the Convention on Biological Diversity.

As mentioned prior, to reduce the opportunities for regulatory capture the CLA Board does not have any representatives from industry.

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The New Compliance Authority

The new CITES Compliance Authority (CCA) will be responsible for managing compliance by business. It will also incorporate broader functions required under the new framework such as audit and fee collection. We would envisage that the CCA is made up of the following areas:

- The Secretariat, which continues to manage CoP and is the primary point of contact for signatory parties.
- The Business Register, which manages business registration and business certification.
- The Inspectorate, which manages and performs inspections on behalf of the CLA as part of listing applications and listing reviews. It also performs inspections on behalf of the business register for businesses that require certification.
- Finance, which manages the budgets of all the new authorities and all fee collection. It also disburses funds to the CDF for distribution.
- Audit, which is an internal audit function for all new authorities, and which also audits signatory countries on the spending of funds provided by the CDF.
- Legal, which will provide legal support to all the new authorities.

We would envisage that the CCA employs around 500 people and will be situated in one location. There would not really be a need for creating regional offices as in the case of the CLA, although parts of the Inspectorate that operate in certain regions might be located in regional CLA offices for efficiency.

At the core of the CCA are the business register and the inspectorate, which manage all aspects of business compliance with listing conditions and reporting requirements. Whilst the actual number of businesses involved in the trade in wild flora and fauna (primary producers, processors, manufacturers, distributors, retailers, exporters, importers etc.) is unknown, it is highly likely that this number is very large. We assumed approximately 60,000 businesses when calculating potential registration fee revenue in Section 8, but it could easily be in the hundreds of thousands as many primary producers and processors will be quite small.

Because the listing process demands joint applications, all businesses involved in the trade will need to be registered with the CCA. This ensures full visibility of the trade, transparent supply chains and provides the opportunity to manage compliance through setting specific compliance conditions on all or some of the businesses involved in a trade as part of the listing process. For example, whilst batch tagging may be sufficient for raw and processed skins, once the skins have been turned into the consumer product at the final stage manufacturer individual tagging may be required to prevent laundering.

In addition to business registration, the listing conditions will mandate certain reporting requirements to monitor the trade. The focus of the CMEA will be on entry and exit point reporting during every step of the supply chain, so the CCA will need to augment this with business reporting on annual summary information, e.g. total captive breeding stock in a facility and total number of animals sold to processor. This can and should then be reconciled with similar totals from every business in the supply chain and the numbers derived from the real-time shipment monitoring. The actual reconciliation and risk analysis will be performed at the CMEA, but the CCA will hold business accountable to producing the required reports and submitting them in a timely manner.

In addition to business registration and reporting, the CCA also manages the certification for key businesses where additional inspection/ verification is needed to reduce incidence of fraud

or corruption. Which businesses must undergo certification will be decided in conjunction with the CLA when listing applications are evaluated and listing condition are set. The goal is to eliminate rogue operators and to close-all significant loopholes for the illegal trade.

The overall compliance burden imposed by the listing on each business that is part of the joint application will likely vary according to scale of the trade and the size of the businesses involved at each stage of the supply chain. It will also depend on the current status of the species in relation to extinction risk and the consequences associated with shrinking or disappearing wild populations beyond ecosystem impact. For example, a disappearing wild population might destroy alternative livelihoods depending on tourism, so more extensive monitoring and compliance conditions may be out on the business(es) harvesting the species in the relevant area.

Beyond the core function of managing business compliance, it would seem appropriate to locate similar centralised functions in the CCA. This starts with locating the Secretariat functions in the CCA, which will still include managing all communication with the parties and responsibility for organising the Standing Committee meetings and the Conferences of the Parties. It should also include a central legal team that supports all the new authorities with legal advice.

Further the CCA would seem to be a good match for centralised finance and audit functions. It could host the finance operations for all new authorities, the fee collection from business and the disbursing of funds to the CDF for distribution. It should further host an internal audit function for all central authorities and for the auditing of funds provided to national authorities as CDF grants. Given the large amounts of money involved, transparency of spending by national authorities and oversight from the CCA will be critical to generate public trust in the new regulatory regime under CITES. As corruption is seen as a key contributor to the vast illegal trade today, accountability for all spending needs to become a central element of how CDF grants are spent by national authorities.

As with the CLA, the operation of the CCA should be overseen by a board appointed by CoP. The board should probably consist of representatives of each of the CITES regions that currently make up the Standing Committee and additional representatives from non-OECD/non-G20 member countries (to make sure that poor and developing countries have adequate representation).

The New Monitoring and Enforcement Authority

The CITES Monitoring and Enforcement Authority (CMEA) will be responsible for making and keeping the global trade under CITES legal. It will work closely with all national enforcement authorities but will have exclusive responsibility for monitoring trade flows across global supply chains and will have the authority to oversee and monitor fishing in international waters.

At the core of monitoring trade flows is centralised data collection in real time from entry and exit events provided by the tagging-and-tracing system used for each of the different trades. As outlined earlier (Section 7), this will likely utilise existing and widely used standard identifiers such as GTIN (Global Trade Item Number) for batch tagging, SGTIN (serialised GTIN) for individually tagged items, SSCC (Serial Shipping Container Code) for identifying a shipment, and GLN (Global Location Number) as the standardised location identifier. All of this information will be centrally collated at the CMEA together with a database of corresponding electronic CITES permits, providing traceability from source to final destination of all shipments.

The CMEA develops the templates and processes used by both businesses and national authorities in creating this data collection system based on global standards. It hosts the IT infrastructure for CITES permitting (which could be based on the existing eCITES system) for countries that do not wish to run their own system. It reconciles trade flows with customs data, reported stocks and annual reports provided by business and conducts the risk analysis in relation to the legality of trade and potential loopholes still used by the illegal trade.

The CMEA also provides the mandatory centralised import and export permit verification whenever shipments cross borders. This includes verification against permitted totals and any other listing conditions. For example, if a shipment is lodged with customs for pre-clearance in a country and the permit includes a quantity of skins labelled as captive bred, the CMEA system will check not only that the quantity is in compliance, it will also trace it back to the registered/certified captive breeding facilities that supplied the skins and that these facilities have stock levels that could actually supply the quantity in the shipment.

The verification of shipments further includes full integration with customs (pre-clearance, acquittal) and reconciliation of declared quantities, including reconciliation between export and import data for all shipments.

The CMEA further supports all national enforcement authorities in their work on keeping the trade legal. We would envisage that as part of the transition to the new regulatory regime all countries commit to set the minimum penalty conditions for illegal wildlife trafficking so that it can trigger inclusion in the UN Convention against Transnational Organized Crime. This would aid the relationships the CMEA needs to build with other stakeholders such as UNODC, Interpol etc that are involved in tackling transnational crime. The CMEA will share data and intelligence with such bodies, to support the monitoring of financial flows associated with the illegal trade in wild flora and fauna.

The CMEA would also become the main global authority tasked with monitoring fishing operations in international waters if all fishing is included under CITES as outlined in Section 10. If this is the case, it will require quite a vast operation ranging from basic monitoring via transponder vessel tracking all the way to drone surveillance and on-board inspections in international waters.

As with the CLA and CCA, the operation of the CMEA should be overseen by a board appointed by CoP. The board should probably consist of representatives of each of the CITES regions that currently make up the Standing Committee and additional representatives from organisations such as UNODC, World Customs Organisation, Interpol and the UN Convention against Transnational Organized Crime.

The New Distribution Facility

The CITES Distribution Facility (CDF) will distribute funds to all signatory countries to finance the activities of their national authorities (Management Authority, Scientific Authority and Enforcement Authority). It will be set up by CoP under the new articles of the Convention and likely be located inside the CCA as the number of staff employed does not need to be large if the audit function is kept separate from the CDF.

Obviously designing a distribution formula for the funds is going to be difficult, but it should be based on the same principles as before – making sure all trade is legal and ecologically sustainable. That means taking into account the level of trade into and out of each country and also the number of species being traded that are native to a country and their relative status. The formula in all likelihood will need continuous revision at CoP. It will also likely need to incorporate a minimum level of grants to make sure that all signatory countries get enough funding to build and support the necessary infrastructure and resourcing.

If all fishing on the high seas is covered by the new convention as discussed in Section 9, then a significant portion of the fees raised will need to go to the CMEA to build the required monitoring and surveillance infrastructure. This would in turn impact the fee revenue available for distribution by the CDF and may necessitate a higher level of fees than outlined above, say 2.5% instead of 1.5% as the annual listing fee for the high-value trades (which would raise an additional US$4.5bn per year using a total trade value of US$450bn).

The distribution scheme and the spending of national authorities is audited by a dedicated audit team in the CCA. Countries will have to report annually to the CCA on the use of funds and their spending will be audited regularly to ensure money does not get diverted to other purposes.

Do We Really Need Central Authorities?

Compared to the current framework of CITES (and most international conventions), this may appear to be an awful lot of regulation and look like 'overkill' in terms of creating 'giant bureaucracies'. From our perspective this is only an issue because society has been conditioned to see all regulation as bad and negative since the start of the neoliberal reforms of the 1980s. The fact is that without a powerful and well-resourced central regulator it is not possible to achieve the two core objectives – ecological sustainability and making all trade legal.

All business participants in the trade in wild flora and fauna are in the business of increasing sales and profit, not achieving conservation outcomes or making the trade legal. Without directly regulating the businesses they have zero incentive to worry about sustainability and can (and do [96]) easily close their eyes to the illegalities taking place. It is only when businesses are forced to comply with regulation to retain market access that they take regulation seriously and internalise the cost of compliance.

We are in this situation of extreme biodiversity loss, global warming and a crisis in waste and pollution because there has been too little regulation for too long. The anti-regulation pendulum has swung too far and needs to swing back decisively to address the most pressing global issues. Any attempt to try to deal with biodiversity loss and environmental destruction without a set of powerful, global regulators is delusional. We already know what we get from that approach – lots of ambitious targets and great speeches, but nowhere near enough practical actions.

It pays to remind ourselves here that none of the Convention on Biological Diversity Aichi targets have been achieved, despite 196 countries pledging to do so just 10 years ago [97].

Section 11

Examples of the New Framework In Action

We will use this section to illustrate aspects of how the new framework would operate for three different orders or species that are currently listed on the CITES Appendix II. We will use python (skins), ornamental corals and rosewood. For obvious reasons, these examples will make assumptions about how listings are actually managed which may not turn out to be workable when the detailed listing system is designed.

For example, having an individual listing for each individual coral species is unlikely to be reflective of how the trade actually works. The order of Black Corals (Antipatharia) is currently listed on CITES Appendix II and contains 7 families with 280 species, with few distinguishing morphological characteristics [98].

In reality, the same companies will be trading in a large number of species and it may be more appropriate to group coral listings by order, family or even by source country / region or a combination of these, as long as the businesses involved are sufficiently distinct. This is different to the current CITES approach, because the new framework directly regulates business and trade, not governments.

We will also provide one example for a potential Appendix I listing under the new framework and we will use lions for this purpose. This will enable us to explore some of the issues involved in processing applications and the implications for both populations in the wild and lions held in captivity.

Example 1 – Python Skins

The international trade in python skins is worth around US$1bn and the skins are used exclusively for high-end, luxury fashion, fashion accessories and a growing number of luxury furnishings. In excess of 1 million skins are produced in the 10 source countries in South-East Asia each year, with the vast majority of snakes harvested from the wild [99]. Almost all skins are sent to Italy for tanning and then bought by the luxury conglomerates including Kering and LVMH that use the leather for shoes, jackets, bags and other accessories.

Under the new CITES transition arrangements we outlined above the businesses involved in the python skin trade would need to register with the CCA predecessor and disclose how many snakes/ skins they process and trade each year. Because this trade is of high value and involves a massive illegal trade, it will likely be prioritised by the CLA for a listing once the new authorities are operational. Despite having been extensively studied and discussed under the current CITES [100], especially in relation to tagging and tracing of skins, in reality nothing has been done to make the legal supply chain transparent or to close down the illegal trade.

The CLA would send out a request for application to the businesses on the register that trade in python and once the businesses have chosen a lead applicant would hold a preparatory meeting to outline the application guidelines and requirements. This includes not just the process steps, but also what issues will have to be addressed for application approval and the information requirements in relation to trade data, population studies, ecosystem health, the current illegal trade, proposals for keeping illegal items out of supply chain and process documentation. It will also notify all NGOs registered as observers of the request for application, so that they can prepare their submissions to the application as well, as can civil society organisations, local communities and individuals.

As was outlined in Section 7, it is assumed that it will take 6-18 months for businesses to prepare

their application. Whilst the work to provide all the necessary data and information may be done or coordinated just by the lead applicant, the actual application is a joint application by all the businesses that trade in pythons as part of the international trade, which means the luxury conglomerates, the tanneries, captive breeders, harvesters and processors in source countries, exporters and importers and any other businesses handling snakes or skins.

These businesses are required to sign a mandatory data and cost sharing agreement, to eliminate free-riding or lack of information sharing during the application process. Any business that does not sign the agreement cannot be part of the application and cannot trade in pythons or python skins once the listing is in force (either approved or rejected). The joint applicants are required to pay the application fee once the preparatory steps are concluded and the application process formally begins.

Simultaneously the CLA will nominate a team leader and set up an evaluation team for this application, which includes external experts and experts from the CCA and CMEA. They will work on refining the evaluation criteria in relation to harvest levels, population status and trends, ecosystem impact of wild harvesting and illegal harvesting, ability to monitor and control harvest levels and process, captive breeding status, conditions and trends, environmental impact of breeding facilities, tagging and tracing requirements to prevent illegal laundering, the current trade in counterfeit python skin bags and shoes, level and evolution of demand for python products and any other considerations that impact the sustainability and legality of the global trade in python skins and derived products.

During the 6-18 months of preparing their application, the joint applicants may request scientific assistance both from the CLA and external experts in their preparation of the application documents. They may also ask for clarification of application requirements and for meetings at the CLA to get answers to questions. All involvement of the CLA requires payments of

additional fees, as per a comprehensive fee schedule that will be published by the CLA. NGOs, civil society and individuals preparing submissions will be responsible for their own costs, but they will not have to pay fees to make submissions or attend hearings.

Once the joint application has been submitted the clock starts on the evaluation process. During the first 120 days the evaluation team will assess the application documents against the evaluation criteria the team has previously agreed upon. This process will generate both a draft evaluation report and a list of questions for the applicants to address. Once the 120 days has elapsed the clock stops, the applicants will receive the list of questions that they need to address to progress to the next stage of the evaluation process. They will be given up to 6 months to answer the questions and to provide any additional information, clarifications and commitments that were

requested by the evaluation team. It is during this stage that the evaluation team may decide to make a further call for public submissions in relation to the application.

Upon receipt of the updated application documents the clock restarts and the evaluation team has 60 days for the next phase of the evaluation process. It is during this second phase that any (expert or public) hearings will take place. The CLA team may also decide to invite further expert advice, whether on scientific or enforcement matters. It should be recalled that the objective is always twofold – achieving true ecological sustainability AND making all trade legal. If the evaluation team members from the CCA and CMEA have any doubts over the effectiveness of the proposed monitoring and controls to keep all trade legal, they may bring in external experts from UNODC, Interpol or private sector organisations with experience in other trades that are heavily monitored (such as pharmaceuticals) to help with the evaluation.

After the second stage either a final evaluation report is published or the evaluation team may request additional information or answers from the applicants, in which case there is a third stage. The applicants will have up to 3 months before the clock restarts again if a third stage is required. The third stage assessment lasts 30 days and the clock finally stops with the publication of the final evaluation report (which is made public).

The published evaluation report includes the final recommendation by the evaluation team. If the final recommendation is against a listing for trade, the joint applicants may lodge an appeal (which requires payment of an additional fee). This appeal needs to provide grounds based solely on all the information already provided to the CLA and a decision made on the appeal is also based solely on the application documents and the evaluation report (and internal documents). No new evidence can be entered into the appeals process. To decide on the appeal, the CLA forms an appeals panel (which does not include any of the evaluation team members). The decision of the appeals panel is final, no further appeals against adverse recommendations for a listing are possible. All application related fees already paid are non-refundable.

If the final recommendation is in favour of a listing for trade, the evaluation report will detail the full listing conditions. In the case of python skins this may include (but is not limited to):

1. Conditions in relation to sustainable harvesting from the wild and the management of harvest processes and quota,
2. Conditions in relation to captive breeding and the management, certification and audit of facilities,
3. Requirements in relation to tagging and tracing of snakes and skins to eliminate the illegal trade and the laundering of illegal products,

4. Conditions in relation to business reporting to the CLA, CCA and CMEA,
5. Special conditions in relation to the process of re-tagging at the tanneries and the transition from batch to individual tagging, depending what solution is favoured,
6. Real-time monitoring and reporting requirements for supply chain traceability and integration with customs,
7. Species management plan and requirements on the national authorities for all countries involved in the trade,
8. Any additional conditions or checks on the issuance of export and import permits by national authorities,
9. Any additional compliance conditions for individual businesses to be monitored by the CCA and the CMEA,
10. Retail tagging and advertising requirements to prevent the sale and advertising of counterfeit or illegally sourced python skin products, and
11. The listing review schedule.

Most of these listing conditions will be standard across a range of species. There will probably be standards for plants, terrestrial and freshwater animals and marine animals. The existence of standards does not mean however that specific conditions will not be imposed for particular species. For example, pythons are both harvested from the wild and captively bred, which requires specific conditions for both in relation to monitoring and compliance. In addition, not all species and their derived products can be easily tagged by microchipping or attaching RFID tags or barcodes.

At this point the joint applicants need to formally accept the final recommendation and enter into a listing agreement (which would be a standard legal document) with CITES. Only then can the final listing recommendation and report be forwarded to the Standing Committee for approval or rejection by vote.

Once the listing is in force there will be a constant flow of data to the CCA, CMEA and CLA. This starts with the real-time supply chain monitoring at entry and exit points and further involves import and export permits and customs pre-clearance and acquittal. It is the CMEA's responsibility to create the necessary algorithms for data validation, permit validation, reconciliation of reported quantities, risk flags and assessments and flagging of any compliance issues (no or late reporting, omission of required data, inconsistent data, suspected fraud etc.). Any issues are brought to the immediate attention of the CMEA enforcement team, national authorities and the CCA for investigation, inspection and any remedial actions.

In the case of species that currently involve a large illegal trade, such as python skins, there will also need to be intensive monitoring of any illegal trade and the mechanisms used to bypass the legal trade protections or to launder illegal skins into supply chains. In this case a specific plan for eliminating the illegal trade is part of the listing conditions and jointly executed by the business applicants, the CMEA and the national enforcement authorities. Reporting on progress with this plan will impact the review cycle of listing, it may require more frequent reviews in the first 5 years.

It should also be noted that any new business wishing to enter the trade in a listed species will have to sign the listing agreement with the CLA and the data and cost sharing agreement with the other businesses to do so. It will also have to register with the CCA and will need to implement all listing conditions and reporting obligations. It will be up to the businesses that have already signed both agreements to decide upon the conditions for admitting new businesses into the trade (such as recouping a portion of the application related fees and costs).

The listing remains in force as long as the listing reviews recommend to keep the trade going, the businesses continue to pay their annual listing fees and no compliance related undertakings necessitate a cancellation or suspension of trade.

If an application for trade has been rejected by the CLA or Standing Committee, the provisional listing is automatically cancelled, and the trade is entered into a special monitoring category for the CMEA. It has to be assumed that if the joint application is not successful, at least some of the businesses will try to continue to trade illegally, so this potential scenario needs to be addressed by the CMEA.

Example 2 – Ornamental Corals

The trade in ornamental corals for high-end aquariums is as equally valuable as the python skin trade, with millions of corals collected from reefs every year and with the total trade worth hundreds of millions of dollars [101]. Whilst in many ways the process of listing corals would be similar to what we outlined above, there are some differences that warrant discussion.

We would venture that in the case of corals the importance of ecosystem impact and the actual methods of selective harvesting would play a much larger role than in the case of pythons. Corals are the foundation of the reef ecosystem and they are fragile, so over-exploitation or lack of care in collecting can have a much larger impact. This in turn brings up the question of the ability to monitor harvesting, given that they are mostly collected by individuals or very small businesses. It should be clear that visual inspections of reefs will have to be part of any listing conditions, but the consequences of non-compliance are harder to deal with when businesses can easily close and reopen days later or when individuals can simply move to the next spot.

The trade in python skins has natural 'choke points' – the initial processors that slaughter the snakes and the tanneries that transform raw skins into leather. We are not aware of similar choke points for the trade in ornamental corals, apart from customs. In addition to a fragmented supply chain, a lot of sales of corals take place online, making it easy to bypass any conditions or restrictions imposed on a business as part of the listing. In view of this it may be necessary to create a 'clearing house' either in each export market or in each import market (or both), so that 1) it is easy to select a lead applicant, and 2) it is possible

to hold a business accountable, where doing so has material impact on the trade.

Because the list of both source and import countries are very short, this is actually a feasible approach. Data from 2000 show that 43% of corals came from the Philippines, 26% came from Indonesia, 12% from the Solomon Islands with the remaining trade being sourced from Australia, the Maldives, Fiji, Palau and Sri Lanka. [102]. The list of destination countries is even shorter, with the paper mentioning only the US, UK and the EU. This may have changed a little since, but it should still be viable to have only one (or two) licensed exporter(s) and one licensed importer in each country (or trade bloc) to create the choke points that will allow control of the trade.

Introducing clearing houses will make it easier to create a viable tagging and tracing scheme (which may be batch tagging of the sealed containers or even of whole pallets). It will also make it possible to monitor total export quantities to prevent illegal harvests exceeding quotas. But the creation of clearing houses doesn't 'keep out the illegal trade', in the sense that the clearing house could still buy from any operator, registered or not, monitored or not (which would involve corruption or fraud, but both are already common in the wildlife trade).

If monitoring and control at the business level is too difficult, it might be more feasible to focus the monitoring on approved harvesting areas whilst also working to prevent any collection of corals from non-approved areas. Given that reef areas not only supply corals but also ornamental fish to the aquarium trade, the total volume of trade would likely make it feasible to introduce drone monitoring or a similar area monitoring technique.

Beyond this, corals are also a good example in relation to designing listing conditions that address real-world issues, not just scientific criteria. As mentioned in the introduction to this section, with corals it is impossible to visually distinguish species due to lack of morphological differences. Hence listings will likely be at the family or order level. If the difficulty of visual verification extends into an inability to verify shipments at customs, then an invasive technique needs to become part of the process and a mandatory level of such inspections will have to be set for all shipments (this is standard practice for sanitary and phytosanitary checks of food products at borders).

Further, coral reefs are subject to increasingly frequent and large-scale adverse events like cyclones and coral bleaching. These are not in the control of the businesses involved in the trade, so instead will need to be monitored by the national authorities in conjunction with the CMEA. In response to such an event the national authority, again in conjunction with the CMEA and CLA, might decide (or be asked to) to close a harvesting area or to drastically reduce regional quota. This needs to happen quickly, so whilst businesses will be consulted and asked to implement the new conditions, it will still have a material impact on the trade.

As can be seen from the above discussion, the way listings are assessed can vary considerably and may even require the establishment of new business entities to make controls feasible. We come back to the basic premise that the new regulatory regime needs to be both flexible and powerful enough to make the trade ecologically sustainable and legal. In the case of corals this would likely mean that source countries will have to pass dedicated legislation to create licensed clearing houses and which grants the governments the right and authority to restrict trade in response to adverse events without getting sued or having to pay compensation to business.

Example 3 – Rosewood

Our final example for an Appendix II listing will look at tropical hardwoods generally classed as 'rosewood' by Chinese furniture manufacturers. Traditionally these were locally sourced timbers in South-East Asia, but exhaustion of available supplies means that most (if not all) of the supplies today are sourced from Africa [103]. These timbers are mainly shipped as unprocessed logs in containers and because many of the species exploited are CITES listed, much of the trade is illegal.

What matters here in relation to the new CITES framework is the ability to control and purge the illegal trade for a listing to be viable. This needs to be contrasted with the actual conditions on the ground in the West-African countries that are the primary source of rosewood exports today. Extensive investigations by UNODC have found that illegal and questionable rosewood exports are a massive business in Nigeria, Gambia, Ghana and Sierra Leone. In the case of the Gambia illegal exports of rosewood are estimated to be worth about half of the country's total exports or 10% of its GDP! [104]

Legal Nigerian exports are supplemented by wood from Cameroon. The illegal exports from Gambia are nearly all rosewood from Senegal. Exports from Ghana appear to be supplemented by illegal imports from Burkina Faso. These are not the only countries that appear to be exporting more rosewood than their known stocks would allow. For example, 'kosso' rosewood has been a protected species in Mali since 1995. Nonetheless, according to United Nations HS (harmonised system) trade data, it managed to legally export

over 80,000 cubic meters of rosewood in 2018, which represents about half a million trees [105].

This 'trade' between countries, which should theoretically require CITES export and re-export permits is hidden because the borders in the region are either poorly policed or in regions effectively governed by local warlords, not national authorities [106]. Controlling the harvesting is therefore not an option to purge the illegal trade. The actual harvesting is very low-tech - local people are recruited to find prime trees and local chainsaw operators are employed to extract them, often for very low wages. Pushers then manually transport the log from the felling site to the depot; and loaders, who work in teams of five or six, load them onto trucks for transport [107]. The first choke point where trade controls could be established is when the logs get loaded into containers.

The second choke point are the harbours used for export, but the countries mentioned rarely have the capacity to unload or scan departing timber containers to verify the contents, so traffickers load the outer third of the container with planks to cover up illegal log exports. In most countries, the sheer volume of the trade makes comprehensive inspection impossible. Nigeria exported around 750,000 cubic meters of rosewood in 2017, equivalent to nearly 40,000 containers of wood, or over 100 containers per day [108]. On the plus side, many harbours in Africa today are under the control of foreign companies, which would enable the CLA and CCA to put conditions on these operators to eliminate illegal exports.

As we mentioned previously, controlling and purging the illegal trade is a core objective of the new framework, so no listing for rosewood (or any tree species) can get approved without presenting a comprehensive strategy to stamp out illegal logging and exports. For such a strategy to gain acceptance by the CLA, CCA and CMEA, it needs to be viable based on known on-the-ground conditions and operations. Hence if it is not possible to catch out illegal logging, stop transport by land and the initial loading of logs into containers disguised by planks, then port operators will have to obtain the equipment and create the space to unload containers for inspection and to store illegal logs until they can be disposed of. Given the nature of the borders in the region and the ability to access alternative ports for export, the same conditions will have to be imposed on any ports that are already being used by traffickers or that they are likely to use unless the infrastructure to catch illegal shipments is put into place.

Similar controls will need to be put in place in import countries for rosewood logs (mainly China, Viet Nam, India), with much stricter controls imposed on the quantity monitoring of both logs and furniture. Monitoring timber has the great advantage that shipments are bulky and cannot travel by air, so ports in export, import and transit countries (like Singapore) are the obvious points to impose controls, inspections and monitoring equipment.

As with corals, the lack of distinguishing features between different species once processed into logs or sawn wood will mean that look-alike species will need to be part of the listings, as is already the case for rosewood species listed by CITES today.

Example 4 – Lions (Appendix I)

As a reminder, Appendix I listings are designed to offer complete protection from any form of commercial (and even educational and scientific) exploitation, in all signatory countries. This means the protections extend beyond trade into regulating domestic markets. An Appendix I listing under the new framework will necessarily infringe on 'private property rights' and could outlaw captive breeding, harvesting, hunting, trade, keeping in captivity (including in public zoos, not just private zoos or entertainment venues), use in medical and scientific research and the trade in any derived products.

Lions would most likely be listed under the global cultural significance category for species that have such status in many or most countries. Lions have immense cultural significance over long historical periods and are most closely associated with status and power. Their use in courts of arms of states (and previously kingdoms) and on buildings signifying power (such as parliaments) is ubiquitous.

Whilst we revere lions, use them extensively in advertising and even make blockbuster movies about them (Disney's The Lion King remake in 2019 grossed over US$1.6bn globally just from box office takings [109]), their status in the wild is precarious. Depending on the threshold used for viability, scientific studies conclude that today as few as 5 genetically viable populations of lions still exist in Africa [110]. The vast majority of lions that are alive today do not live in the wild at all, they live in captive breeding facilities (mainly in South Africa), where they are bred for canned hunting and the lion bone trade.

It is because of the profound mismatch between global status as an iconic species and the precarious status of wild populations that an Appendix I listing for lions should be considered under the new global cultural significance category. What the exact listing criteria for this category would look like can only be hinted at here. Whilst not allowing lions to go extinct in the wild should be part of the considerations, the main line of argument should be that breeding and keeping lions in captivity is inconsistent with their status in human culture. Keeping them in captivity is simply a display of human dominance over other top predators and services economic interests (hunting, entertainment, lion bone trade).

It should be clear from the above that the purpose of the new Appendix I is to lift humanity beyond the 'humans were put on this planet to dominate and exploit nature' narrative of the last 300 or so years and to consciously set boundaries for its application. This applies to the non-human rights category as well, as it implies sharing the planet, not dominating it.

An application for listing lions on Appendix I would likely be made by a coalition of NGOs and other public and private sector organisations concerned with the current practices of killing and exploiting lions for profit. In contrast to Appendix II applications, opposing views will always be allowed and included in the submissions for evaluation. This potentially sets up an antagonistic dynamic between two equally committed sides motivated by self-interest. Hence we suggested that as part of listing evaluations for Appendix I the CLA team actively canvasses global opinion, to tap into the feelings and positions of people not normally consulted in this regard.

If a listing for lions under the global cultural significance category was granted it would likely outlaw all commercial activities involving live animals and derived products. This would include the cessation of trophy hunting, all captive breeding and the pet trade in the case of lions, as well as the keeping of lions in captivity for any purpose. It would also require all signatory countries to make the killing of wild lions illegal in domestic law, necessitating a different approach to 'problem animals' in Africa. Such a listing would further need to create extensive protections for the remaining wild populations.

As we outlined in Section 6, to finance all such protections and protected areas global 'image rights' would be granted to CITES for Appendix I listed species (under the global cultural significance and non-human rights categories). Images of iconic species are used extensively in advertising, movies and TV and assigning these image rights to CITES would allow the CCA to charge fees for using their likeness in any commercial activities. In the case of lions this idea has already been implemented as a voluntary initiative for the advertising industry in the form of the Lion's Share Fund [111].

Section 12

Scope Considerations

The overall scope of the current CITES convention is set in the preamble and the definitions that precede the articles. According to both it encompasses all 'international trade in endangered species of wild flora and fauna'. Under the definitions trade is clarified to include export, re-export, import and introduction from the sea. Introduction from the sea is further defined as the 'transportation into a State of specimens… taken from the marine environment not under the jurisdiction of any State'. This means any marine species caught in international waters are subject to the scope and consideration for listing by the current CITES framework. The scope leaves out any exploitation of wild flora and fauna for domestic consumption, which includes marine specimens harvested from inside a country's exclusive economic zone (as long as they are consumed domestically).

Under the current blacklisting model, the actual scope of CITES activities and processes is always confined to the species listed on the three appendices. This number has been growing rapidly, from 700 species listed in 1981 to over 38,700 today. CITES does not concern itself with endangered species that are not traded as per the definition above and it does not concern itself with species that are traded, but not currently listed. The latter constitutes a significant shortcoming, as this obscures a large trade for which no data is collected (and the lack of a listing may be due to politics, not threatened species status).

Whilst CITES currently cannot regulate domestic consumption it has a recent history of passing resolutions to ask countries to close domestic markets in rare circumstances (such as for ivory and rhino horn). It also has been supportive of

demand reduction initiatives, which shows further willingness to interfere in domestic markets.

What changes under the proposed whitelisting model is not the overall scope of the convention, which remains the same, with a slight widening of its mandate to regulate domestic markets for the small number of species listed on the new Appendix I. Instead, the actual scope of CITES processes and activities now becomes ALL species being traded (as per the CITES definition), as no trade can take place without successful application for a listing on the new Appendix II. This broadening of the scope closes the previously mentioned loophole and ensures we get full visibility of the impact of international trade on wildlife populations. It also eliminates the impact of listing delays, which currently average 12 years [112].

The practical impact of this switch to a whitelisting model is greatest for the extraction of marine species from international waters, with all commercial fishing becoming subject to direct CITES regulation under the new model. Given that direct exploitation constitutes the primary extinction risk for marine species according to the exhaustive 2019 IPBES analysis and report, this is a necessary step from a sustainability perspective. At the same time it will likely prove controversial in getting international agreement.

The second likely impact of switching to whitelisting will be discussions on what constitutes 'wild' flora and fauna, especially when it comes to plantation timber. CITES currently only lists a handful of high-value commercial tropical hardwood species such as rosewood and agarwood used in high-end furniture. It does not at present consider any timbers used for construction, building materials, paper/pulp/cardboard production and mass-market furniture. These trades in timber and woodchips are far larger than the trade in tropical hardwoods and rely on a mix of plantation timber and logging intact forests.

We will briefly discuss fishing and the timber trade to highlight some potential issues in relation to adopting the new CITES framework as outlined above.

Timber Trade Under the New Model

Given that so few tree species that are used commercially are currently listed on the CITES appendices, the inclusion of all commercial timbers will probably need to be done in stages of practicality and importance from an ecosystem perspective. The global timber trade is massive, estimated by the FAO to be worth around US$150 billion and involving the cutting of over 2 billion m^3 of logs [113].

With old-growth forests being major carbon sinks and with tropical forests being hosts to some of the most diverse ecosystems on the planet, inclusion on the new Appendix II should prioritise both old-growth forests and tropical timber species. This process could start with current CITES listed timbers, rosewood, agarwood and similar tropical hardwood species, which comes from old-growth forests and are predominately used for high-end furniture. These listings and trade will become the test cases for the issues related to monitoring and business compliance outlined in the previous section in Example 3.

Once the new compliance and monitoring systems have been tested on those species, the transition arrangements could then require all plantation timbers to obtain a listing to continue the trade. Moving to plantation timbers next has the advantage that most of these operations are managed by large corporations, making the creation of monitoring and compliance systems that can handle both the scale of the trade and the very large geographical areas involved easier to manage and enforce. The inclusion of plantation timber will likely spark a discussion on whether tree plantations constitute 'wild' flora and fauna, which will have to be settled by the CLA unless the issue was already addressed in the definitions for the new articles of the convention.

The final step in transitioning the timber trade fully into CITES would be the inclusion of all non-plantation timber. This should become practical based on the learnings and the systems developed during the first two stages. The overall value of the trade will make the compliance and monitoring costs feasible based on the fee model outlined in Section 6.

Commercial Fishing Under the New Model

Given that marine species are most under threat from direct exploitation for trade and domestic consumption and given that the scope of the current CITES convention already covers fishing in international water it is imperative that the new regulatory framework also covers fishing on the High Seas and any trade in marine species. Current fisheries agreements and marine parks have proven inadequate in protecting marine species, with 93.8% of fisheries either 'overfished' or 'fully fished' [114].

According to the latest FAO data 82million tonnes of marine fish were caught in 2018 and another 31million tonnes (27% of total) were produced by marine aquaculture. Human consumption of fish continues to grow at 3.1% per annum, twice the rate of population growth and higher than all other animal protein foods (meat, dairy, milk, etc.), which increased by only 2.1 percent per year.

That these trends are unsustainable should be clear from the fact that the percentage of stocks fished at biologically unsustainable levels increased from 10% in 1974 to 34.2% in 2017 [115].

With CITES having the mandate to protect endangered species from overexploitation through trade, it follows that a modernised CITES must include all trade in marine species. The proposed whitelisting model for the new Appendix II makes the inclusion of all marine species automatic but creates challenges from an implementation perspective.

The main challenges arise from the need to monitor fishing on the High Seas, which is only possible using transponders, satellites and high-flying or marine drones. The technology for monitoring exists but requires much greater cooperation from nation states on compliance,

especially in relation to the use of transponders for identifying and tracking vessels. Satellites and drone technology are highly proprietary and under the control of only a handful of countries that would need to contribute such technology if part or all of the global monitoring authority over the High Seas is ceded to the CMEA. The CMEA would seem the only logical choice given its status under the new CITES and the absence of any other monitoring body with similar global status and authority (and no such body being proposed for the new UN Convention on the High Seas currently being considered).

Further, a great deal of fishing uses technology that is indiscriminate in relation to what species are being caught. Trawling is a primary example, but the majority of trawler fishing takes place in exclusive economic zones, so is outside the scope for CITES (unless the resulting catch is exported in raw or processed form). All such technologies that do not discriminate will need to be handled appropriately when it comes to CLA listings and listing conditions. As mentioned prior, it may make more sense to apply listings to types of fishing instead of individual species to achieve the required regulatory outcomes. These technical questions would need to be settled both during the negotiations for the new articles and during the transition period. As with the timber example in Section 11, it may also make more sense to focus on the monitoring of choke points, which naturally would be the harbours where the catch is landed.

In addition, there is great disagreement on the concept of 'maximum sustainable yield' now commonly used to 'manage' fisheries. This term is derived from economic needs, not ecological sustainability. It applies to keeping population levels well below ecological carrying capacity, usually at only 20-50%, thereby depriving the populations and the ecosystem they are part of of the ability to ever fully recover [116]. Combined with the inability to estimate fish populations apart from still relatively crude models derived from catch levels ('virtual population analysis'), the concept of ecological sustainability of fishing would need to be recast to allow both the CLA and CMEA to achieve their prime objectives.

This would require regular, ongoing scientific sampling of populations to obtain a true picture of both the current state and, eventually, historical trends. Using catch levels as the basis for analysis as is current practice will always return biased results, as fishing is an economic activity designed to maximise catch levels per unit effort. Fishing therefore takes place predominantly in the areas where catch levels are highest, distorting population estimates derived from catch levels.

Rather than the optimisation of 'maximum sustainable yield', fisheries management from a ecological sustainability perspective needs to consider the ocean more holistically, including the whole marine foodchain, damage to the seabed and bycatch issues associated with fishing. Clearly there is a need for better metrics of environmental health, based on a more holistic understanding of the overall impact of fishing, rather than whether each individual stock could still be able to replenish its population size in the following year [117].

Section 13

Futureproofing

The aim here is to present an effective regulatory framework to make the trade in endangered species of wild flora and fauna both demonstrably sustainable and legal. As with any regulatory framework, it has been designed to fix the problems of its predecessor and to incorporate commonly known issues and inadequacies in similar regulatory frameworks. This does not mean that implementing the proposed framework will result in achieving the two core objectives, either immediately or over time. The history of regulation proves that there are many possible ways in which even a well-thought-out system of regulatory measures can fail in practical application or become ineffective over time as those being regulated adapt their behaviour.

We can therefore expect that the business practices of businesses legally trading in endangered species and national government legislation and enforcement measures will evolve in response, as will the efforts of the traffickers in circumventing the new measures. Some businesses will aim to minimise the costs of compliance and some governments will aim to find 'creative' ways to use the funds provided by the CDF for unrelated (but higher national priority) spending. Traffickers will invest heavily in protecting their ability to stay in business and continue to profit from the illegal trade.

In addition, some of the key assumptions we made in creating these proposals may turn out to be unworkable for some or whole classes of species or trades. As already foreshadowed above, there are significant question marks in relation to the two highest value trades that should be regulated under the new CITES – fishing on the high seas and the global timber trade. Incorporating both is critical to the financial workability of the proposed

framework, quite apart from the fact that marine species are the most under threat from exploitation for trade.

As with any new regulatory scheme, there will be lots of doubt cast on both specific aspects of the proposed regulations and the overall desirability of implementing such a scheme, e.g. compared to the 'need for economic growth' or 'need to address poverty through alternative livelihoods'. It is therefore likely that some or many provisions incorporated in these proposals will be watered down or omitted entirely to get these changes implemented at all. This is even more likely given the notions of 'free trade' and 'human superiority over nature' remain the guiding principles for our collective behaviour.

It is further predictable that industry will cultivate (paid) relationships with 'open minded' academics to arrive at research findings that water down the notion of sustainability to the lowest possible denominator. This is already established practice, for example in the notion of 'maximum sustainable yields' which actually means 'the most that can be taken without crashing the population' and which makes no allowance for restoring the population or the ecosystem to healthy levels.

Hence the single most important feature of any new scheme ought to be the ability of the regulator to evolve in response to changing circumstances without the need for a re-negotiation of the convention (which is both hard and very time consuming). More modern UN Conventions than CITES have a mechanism for amendment through the inclusion of new protocols, but even such a mechanism would be too slow to respond to changes in effectiveness of the regulator. It would instead be better to make sure that the new CITES articles set the core priorities – making all trade legal and truly ecologically sustainable – in stone whilst also including mechanisms for the evolution of HOW these objectives are achieved when it comes to the practical application of the regulatory framework.

This ability to evolve the regulatory framework is a critical safeguard to avoid being left stranded when say traffickers or businesses adopt new practices that were not foreseen. The best way to achieve this capacity for continuous evolution is to create both internal and external review mechanisms that assess the effectiveness of the CITES authorities, processes and definitions/ measures in relation to the two core objectives. For such a review mechanism to be effective, both the core objectives and the monitoring/ assessment of their achievement need to be sufficiently well defined to prevent a divergence between, say, individual species sustainability and global biodiversity or ecosystem assessments such as through the IPBES.

It also means that the definition of ecological sustainability needs to allow sufficient margin so that errors in measurements or assumptions or external events do not result in population or ecosystem collapse. At the same time the measures used should be equally subject to evolution. Recent decades have shown us that our

knowledge of biodiversity and the interdependencies and feedback loops between species and ecosystems is still poorly understood. Counting populations is not necessarily the most efficient or even most reliable way of monitoring a decline in a species. It would seem pertinent to make the new CITES not just a 'consumer' of biodiversity and sustainability research, but also a major instigator.

We would advocate for a system where the boards of the new CITES authorities instigate reviews of the overall effectiveness of the regulatory framework and of the processes used to achieve the objectives. We would further advocate that CoP instigates regular external, independent reviews that include input from all stakeholders. These reviews should be part of the normal budget of the new authorities, so that funding does not present an issue. The reports and recommendations of all such reviews should be made public, to maintain transparency.

Such reviews should also take into account the findings from external sources, such as reviews of the CBD biodiversity goals and IPBES reports. Further input will likely come from IUCN Redlist assessments and any other data sources and research not routinely examined by the CLA as part of both listing applications and listing reviews.

An example of how the framework could change or adapt over time might be the nature of both listing applications and listing reviews. It is entirely conceivable that managing listings by species or order is not the most effective way of achieving sustainability for some trades. An obvious example is trawler fishing, which is completely indiscriminate in the species harvested as a massive net is simply dragged along the ocean floor or at a specific depth until it is full. The most effective way to regulate trawlers might instead be banning the practice completely or banning it in certain regions/fisheries where species or ecosystems requiring protection are under threat due to the destructive nature of trawling.

In addition, many of the proposed reviews will have to deal with the 'unintended consequences' of regulating one species or harvesting practice. If we stay with the trawling example, banning the practice altogether might make salmon farming in its current form economically nonviable as the cost of producing fish meal would likely rise (over a third of fisheries landings go into aquaculture feed or other non-direct food uses [118] and see also [119]). The salmon farming industry would likely protest vehemently and lobby governments to restore trawler fishing to protect their business model and profits. It is then up to the new CITES authorities to determine the course of action that best maintains ecological sustainability, which may involve farmed salmon becoming a lot more expensive.

We need to remind ourselves at this point that our current economic system does not price in any so-called externalities into the cost of doing business. Whether that means the use of clean water or clean air or the recycling of waste or rehabilitating sites after the end of extraction or production, most industries are currently not required to think about any of their impact on nature, ecosystems and biodiversity.

This means that the new CITES will have to play a big role in educating business. It is highly likely that this transition from not caring about externalities to being subject to stringent regulation will require ongoing changes in how the regulations are implemented and monitored. These consequences may go beyond CITES and create new reporting obligations on listed companies or the need for a whole new model for incorporation that explicitly includes externalities (similar to B-Corporations in the US) for any company involved in the trade in wild flora and fauna.

Section 14

Making It Happen

Given the comprehensive nature of the proposed overhaul of the CITES convention it will likely take 7-10 years before the new regulatory system is in operation. Of course, the starting point is the acknowledgement that the current CITES system is no longer up to the task of ensuring sufficient protection for endangered species. This acknowledgement is currently lacking, with many parties and NGOs still peddling the old line that 'CITES is an effective convention'. This line is driven primarily by fear, the fear that if the articles of the convention are opened for renegotiation the end result is going to be something worse than what is currently in place.

The belief that any renegotiation could end up with a 'worse' result is based on two fallacies:

1. That the sanctions regime under the current articles is an effective deterrent, and
2. That the current listing mechanism is effective in protecting species.

Both assumptions are clearly wrong, but it takes courage to admit that for the many experts who have often been embedded in the CITES processes and committees for decades. We are not going to repeat the arguments from earlier here, but any sanctions regime targeting whole countries instead of the businesses conducting the trade is going to be ineffective, especially if those countries lack the funds for proper enforcement of said sanctions and if porous land borders or corruption make bypassing those sanctions a breeze for traffickers and 'legitimate' businesses. All of these conditions are met in the case of CITES and the countries being sanctioned by the Secretariat.

That the current listing mechanism does not provide sufficient protections for endangered species is self-evident from the lack of recovery of those species in the wild. As long as CITES, IUCN and other IGOs and NGOs keep counting captive held populations any attempt to paint a proper picture of the state of endangered wildlife is going to be deceptive. The 2019 IPBES report has made it clear that the state of biodiversity is dire and getting worse fast. It has also made it clear that direct exploitation for trade is the primary factor for the extinction risk of marine species and the second most important factor for terrestrial and freshwater species. Any claim that CITES protections are currently 'working' is therefore nothing but wishful thinking.

Submission to CoP19 in 2022

In order to arrive at the acknowledgement that CITES does need to be modernised, the convention needs to be subjected to a comprehensive review. This is possible and the request for a comprehensive review can be put to the next Conference of the Parties in Costa Rica in 2022 as long a one or several parties table a submission to this effect and make funding available. The Secretariat is not going to support any submission that requires substantial funds to implement without an adequate funding source (which could be governments or foundations). It is likely that conducting a comprehensive review of the effectiveness of the current CITES regulatory framework will cost in the order of US$500,000.

For such a review to lay the groundwork for a comprehensive reform of CITES in line with what has been presented in this document, the Terms of Reference for the review need to encompass the complete regulatory framework and the current lack of funding for compliance, monitoring and enforcement. This means taking stock of what the parties do nationally as well, not just examining the working of CITES, its processes, committees and the Secretariat. The last review of CITES was in 1994 and its terms were too narrow to lead to any useful reforms in the aftermath. Even many of the (useful) recommendations made were not implemented because the question 'Where does the money come from?' was never even on the table.

For such a review to be initiated at CoP19 in 2022 it will need the support from two-thirds of the parties with voting rights attending the Conference, which is normally around 100 votes. In practice support from the US, the EU and China will be critical as will be support from most African countries.

In parallel with commissioning a comprehensive review of CITES the submission to CoP19 should also call for the establishment of a Working Group that will study the core tenets of the proposals presented here – moving to a whitelisting model, joint applications and using fees paid by businesses to fund all activities of the central and national authorities. This Working Group would also require funding to be able to bring in consultants and to conduct workshops with experts from the EMA, ECHA and other regulatory bodies currently using a whitelisting model.

To accelerate progress, it would also be advisable to set up a second Working Group at CoP19 that will drive the creation of the Business Register, as outlined in Section 9 - Transition Arrangements. It would study and propose a model for putting the Business Register in place by CoP20, irrespective of the outcomes of both the review and the other Working Group. Having a comprehensive business register with reporting on traded species, derived products and quantities will go a long way towards better monitoring of the trade, even if moves towards comprehensive reforms are stalled or progress at snail's pace.

Following CoP19

The review and Working Groups would report back to both Standing Committee meetings in the lead up to CoP20. Based on those reports parties will have the opportunity to formulate their position on the proposed reforms and review findings and make submissions to CoP20. In the ideal case scenario there will be a strong push to reopen the articles for renegotiation, which requires a two-thirds majority vote at CoP.

If such a vote is held and carried, the process of negotiating the new articles would commence. This could take many years, depending on the divergence in negotiating positions, the strategies adopted by the key players and the degree of political will to arrive at better protections for the natural world.

Undoubtedly, at this point in time, most of the people with intimate knowledge of CITES would consider the chance of substantial reform of CITES to be very low. They would point to the divergent positions of Japan and the SADC countries on many CoP votes seeking stricter protections. They would also point to the fact that economic growth is and remains the almost sole focus of governments across the globe, with most talk about protecting nature being just that, talk. They would further point out that there has been no appetite for reform of CITES, no recent review and very little progress in other areas of biodiversity protection, such as the CBD post-2020 global biodiversity framework and the negotiations on a new UN Convention on the High Seas.

Looking at the situation from this perspective is certainly informative, but it is also solely looking backwards. This situation both for human civilisation and for nature is changing and changing rapidly. We have already crossed crucial tipping points that as time progresses will have major impacts on both agriculture and freshwater availability. Global warming increases climate variability, which in turn creates more frequent adverse events. The opportunities to increase land clearing or fishing without triggering catastrophic collapse are getting more and more limited. Pandemics are ongoing and huge in scale, and this is not just about the pandemics which crossed the line to humans. Avian flu and African swine flu have decimated farm animal populations and new outbreaks continue to do so. As all of these adverse events increase, insurance becomes nonviable, and governments will be on the hook (they already are for most of these types of events).

The momentum of change is therefore clearly in the direction of finally taking notice of the adverse implications of continuing the unrelenting destruction of nature and pursuit of economic growth. We haven't reached the tipping point yet, but ideologies at first die very slowly and then in an instant. The slow death of the current ideology has been underway since the global financial crisis of 2008. We cannot know when this slow death will turn terminal, but it could happen soon.

The second insight from the history of changes in ideologies is that when the final death comes, the new ideas that are being adopted are those that 'have been lying around' (and fit with the direction of change). It is from this perspective that the proposals presented here need to be thought about and talked about now. If at the time when the opportunity for radical change is finally on the table most players are already familiar with a viable alternative, adoption and implementation can be rapid.

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