



environmental
investigation
agency

Wildlife

Lethal Remedy

How the promotion of some traditional Chinese medicine in Africa poses a major threat to endangered wildlife

November 2021





ACKNOWLEDGEMENTS

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ABOUT EIA

We investigate and campaign against environmental crime and abuse.

Our undercover investigations expose transnational wildlife crime, with a focus on elephants and tigers, and forest crimes such as illegal logging and deforestation for cash crops like palm oil. We work to safeguard global marine ecosystems by addressing the threats posed by plastic pollution, bycatch and commercial exploitation of whales, dolphins and porpoises. Finally, we reduce the impact of climate change by campaigning to eliminate powerful refrigerant greenhouse gases, exposing related illicit trade and improving energy efficiency in the cooling sector.

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Front cover: Pharmacists dispensing traditional Chinese medicine ingredients such as in the image shown here are becoming an increasingly common sight across Africa.

Photo ©Simon Lim

Above: The medicinal cupboard of a TCM hospital in China. Each drawer is labelled with the ingredients it contains, including pangolin, snake, scorpion, tortoise shell, frankincense and myrrh.

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Executive summary

Traditional medicine is integral to many cultures and plays an essential role in healthcare in Africa.

The Chinese Government has been ramping up its expansion of traditional Chinese medicine (TCM) in Africa as a key part of its controversial Belt and Road Initiative (BRI). Major TCM companies and countless clinics have already been established across Africa, with further plans to construct full supply chains from sourcing to sales.

A wider range of TCM products has never been more easily accessible in Africa, with pharmaceutical companies setting their sights on an emerging African market and consumer base, as well as seeing the continent as a potential source of TCM ingredients.

Unfettered growth of TCM, however, poses a serious threat to biodiversity in Africa, all in the name of short-term profit. Any utilisation of threatened species in TCM could stimulate further demand, incentivise wildlife crime and ultimately lead to overexploitation. High-level meetings such as the triennial Forum on China-Africa Cooperation (FOCAC) summit, expected to take place in late 2021, are important opportunities to address these concerns.

Key findings of EIA research include:

- TCM is gaining ground in Africa, with an increasing number of African governments entering into official agreements with the Government of China to support TCM development;
- TCM is being further endorsed under national laws in certain African countries, as seen in Namibia and South Africa;
- TCM products containing animal parts are openly available for sale in retail outlets in Africa;
- the COVID-19 pandemic has enabled the Chinese Government to strengthen its promotion of TCM in Africa;
- there is an urgent need to address the risks posed by popularising TCM in Africa, notably resulting from the expansion of TCM pharmaceutical companies targeting traditional African medicine (TAfM) and TCM consumers.

This briefing is based on the key findings of preliminary desk-based research carried out between 2019-21; a brief field visit to Johannesburg, South Africa also verified some of these findings.



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Background

According to the World Health Organisation, as much as 80 per cent of the African population relies on traditional medicine as their primary health care.¹ Traditional medicine also plays a significant role in the preservation of cultural heritage and knowledge-sharing. With the widespread use of herbal and animal-derived remedies that resonate with local traditions, it is no surprise that millennia-old traditional Chinese medicine is gaining traction on the African continent.

TCM has a long history of expansion and of influencing the traditional medicine of other regions. Asian countries such as Korea, Japan, Laos and Vietnam all have traditional medicine which incorporate TCM philosophy^{2,3,4} that continues to affect local thinking and consumption today. The expansion of TCM has also traditionally been coupled with the introduction of foreign medicinal species to enrich existing formulas.⁵

While only a small portion of TCM formulas use animal ingredients, the sheer size of the consumer base has made consumption of TCM a significant cause for the decline of species including tigers, leopards, pangolins and rhinoceros.⁶ As TCM expands in Africa, it could potentially change wildlife consumption patterns of local populations and exacerbate the pressure on these species and others.

EIA is concerned that the Chinese Government's promotion of TCM in Africa will stimulate demand from both Asian and African consumers and increase the risk of poaching and habitat degradation.

Above: A TCM pharmacist in China portioning out a prescription that includes snake. The combination and quantity of ingredients is adjusted based on the need of individual patients.

Far left: Donkeys in Africa are being exploited for their skins to feed the TCM market in Asia.

Left: Ox bezoars now feature on the list of commodities African wildlife traffickers deal in.





2018年中非合作论坛北京峰会

The 2018 Beijing Summit of the Forum on China-Africa Cooperation
Sommet de Beijing 2018 du Forum sur la Coopération Sino-Africaine

3-4 September 2018

2018年9月3-4日

3-4 Septembre 2018



FOR SHARED FUTURE



China's promotion of TCM in Africa

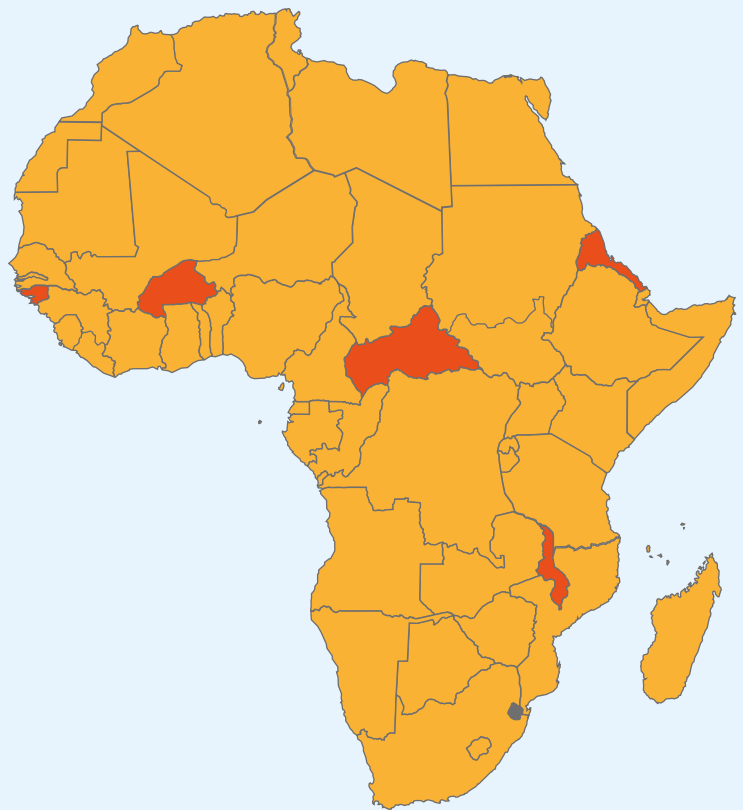
In a bid to build diplomatic relations and provide healthcare, the Chinese Government has been sending medical teams to Africa since 1963.

At least 21,000 medical professionals, including more than 2,000 TCM practitioners, have provided services in 45 countries including Cameroon, Malawi, Tanzania, Uganda, Zambia and Zimbabwe.^{7,8} These efforts have formed a pivotal element of the Government's foreign policy strategy in Africa.

This decades-long initiative has reinforced local acceptance of TCM and has paved the way for the expansion of TCM in Africa. Chinese media and academics have repeatedly pointed to Africa as a place of great potential for the development of TCM.^{9,10,11}

TCM has been a staple feature at FOCAC, a high-level platform which brings together 53 African countries and China. This year's summit is being hosted by Senegal, and healthcare cooperation is expected to be high on the agenda.

One of the multilateral agreements signed by members of FOCAC is the Beijing Action Plan, which calls for strengthening collaboration in the development of agriculture, infrastructure, trade, education and healthcare. The latest edition of the Action Plan with strategic plans for 2019-21 states that members will "support the collaboration between TCM and TAFM,



KEY	
	FOCAC Members
	FOCAC and BRI Members
	Not member of FOCAC or BRI

strengthen high-level exchange, encourage TCM and TAFM institutions to set up centres in Africa to provide medical service, education, research, and cooperation with the industries.”¹²

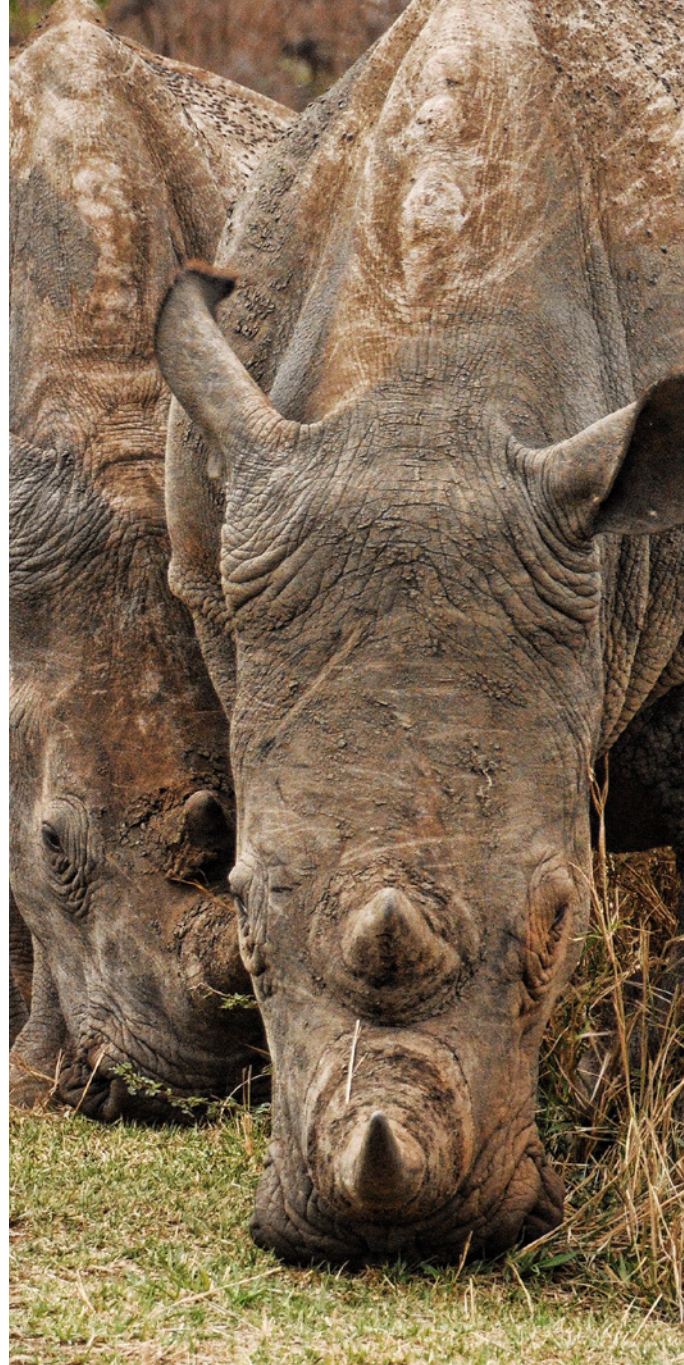
Another notice issued by China’s State Council, China’s cabinet and its chief administrative authority reiterated that global TCM expansion was part of the country’s 2016-30 national strategy.¹³ The long list of ambitious global objectives set out in the strategy includes the construction of international TCM centres, the training of TCM practitioners locally, the registration of TCM products, the recruitment of new consumer groups and the expansion of the TCM industry to explore and source ingredients. With inter-governmental MoUs on cooperation for TCM signed and TCM pharmaceutical companies encouraged to set up factories in Africa, these top-down policies are beginning to be implemented on the ground.

Promoting the international trade in TCM products has become a key foreign trade objective. This ambition is partly being realised through China’s contentious BRI,

President Xi Jinping’s multi-billion dollar infrastructure investment project. At the core of the initiative are five pillars – policy coordination, infrastructure development, unrestricted investment and trade, financial integration, and cultural and social exchange. According to a Government notice on the strategic plans for TCM from 2016-20, TCM is to be an integral part of each of these pillars.¹⁴

EIA has, however, noted cautionary tales about how transnational criminal syndicates and TCM traders can exploit vulnerabilities in these BRI pillars, namely corruption and lack of law enforcement, to facilitate wildlife trafficking and other illicit activities.^{15, 16, 17} There is considerable risk that TCM expansion under the BRI could exacerbate the involvement of criminal networks in wildlife trafficking in Africa.

Opposite, and above: China has been increasing its investment and collaborations in Africa through the BRI and FOCAC. The Government has used the Covid-19 crisis to promote TCM across the continent.



Species under threat

The rapid population growth and rising demand for TCM in China has led to the unsustainable exploitation of wildlife, which has accelerated the decline of a range of species both in Asia and Africa. Notable species impacted include bears, rhinos, big cats, and pangolins.

Historically, when the supply of a TCM ingredient became scarce in China, traders set their sights on regions further afield. The supply of ingredients such as saiga horn, seahorses, tokay gecko and rhino horn has depended on their availability for importation into China. When the availability of a species becomes extremely scarce, related species may be exploited, as in the case of African lion bones being traded as tiger bones in TCM markets in Asia.^{18,19}

The risk to African flora and fauna is further exacerbated by the fact that there are key overlaps in the plant and animal species used in TAFM and TCM. Certain plant species used in TAFM formulas share the same genus as those used in TCM, while rhino, pangolin, tortoise, hedgehog and porcupine are all used as ingredients in both traditions.²⁰ Such interlinkages could make relatively unexploited and less expensive African species attractive to the TCM industry, resulting in their exploitation by profit-driven TCM traders and pharmaceutical companies.



The Chinese Pharmacopeia, the official compendium which sets out the standards for the identification, processing and usage of TCM and conventional drugs, is updated every five years to reflect developments in the medical sector and changes in demand.²¹ New species can be added if there is sufficient consumer demand; for example, African plant species such as myrrh and frankincense were included as new ingredients in the official Chinese Pharmacopeia in 2010.

The exclusion of a species from the TCM ingredients section of the Pharmacopeia does not mean that the species is excluded from use as it could still be listed in the patent medicines (finished products) section.²² Moreover, TCM ingredients and patent medicines not listed in the Pharmacopeia can still be used in compliance with provincial standards and drug safety regulations.²³ Consequently, threatened species such as elephants, leopards, lions and pangolins can still be utilised by the pharmaceutical industry regardless of whether or not they are listed in the official Pharmacopeia.

Such is the severe ecological damage caused by the use of threatened species in TCM that the central bank of Norway has decided to exclude four major TCM companies from its Government Pension Fund Global investment, one of the largest sovereign wealth funds in the world.²⁴

Some traders in China are already marketing TAFM ingredients, such as moringa seeds and yohimbe bark sourced in Africa, as health supplements (“bao jian pin” 保健品).²⁵ This points to a clear money-making opportunity at the TAFM-TCM nexus. Without essential safeguarding regulations in place, the extraction of African wildlife and plants could quickly outstrip their populations in order to feed the expanding global demand for TCM.

Opposite, and above: Some of the world's most iconic endangered species have suffered from the exploitation for TCM. It is pivotal to stop the use of threatened species in traditional medicine for the health of us all.



The use of elephant parts in TCM

The Pharmacopeia does not list any elephant parts as a TCM ingredient. There are, however, records of the use of ivory as shavings or powder to treat seizures, boils or sore throats and elephant skin to treat ulcers, wounds and haemorrhoids.^{26, 27}

Online research shows at least four registered patent medicines containing ivory and five containing elephant skin, meaning the use of elephant parts for TCM is endorsed by the Chinese Government. These products are either for ingestion or topical application. Elephant skin powder is even available from Jingdong, one of China's largest online shopping platforms.²⁸ The images shown opposite are examples of products that claim to contain elephant ivory or skin, as promoted on manufacturer websites in September 2021.

There have been incidents of poaching of Asian elephants for the use of their skin in TCM, which raises serious concerns about the threat of TCM for elephants

in Asia.³⁰ Although EIA is unaware of any reports of African elephants poached for their skins or reported seizures of African elephant skin in Asia, the Convention on International Trade in Endangered Species (CITES) currently allows commercial exports of elephant skin and hair from Botswana, Namibia, South Africa and Zimbabwe.³¹ The CITES database shows that the latter two countries are the main exporters of elephant skin to China, with two 20-tonne shipments sent from Zimbabwe to China for commercial use. The extent of demand for elephant parts for TCM is currently unclear, but given that all three elephant species are either endangered or critically endangered, this commercial trade and loopholes in the law enabling legal trade in elephants parts for TCM exacerbates the threat posed by trade to elephants in Africa and Asia.

EIA calls for an end to the legal trade in any elephant products, including TCM containing ivory shavings or skin.





药品名称：锡类散
 药品名称 **象牙屑**、青黛、壁钱炭、人指甲、珍珠、冰片、人工牛黄
 功能主治：解毒化腐，用于咽喉糜烂肿痛
 用法用量：每用少许，吹敷患处，每日 1-2 次
 产品规格：蓝色包装（1g/袋）红色包装（2g/袋）
 有效期：36 个月



Patent medicine containing ivory produced by Jiangsu 707 Natural Pharmaceutical Co Ltd 江苏七0七天然制药有限公司. The company's website states that the product Xi Lei San is covered by national medical insurance and contains ivory shavings (象牙屑).



Elephant skin powder (象皮粉 "xiang pi fen") produced by Beijing Huamiao TCM Technology Development Centre 北京华邈中药工程技术开发中心 under Sino-TCM, which in turn falls under the State-owned Sinopharm. It is the only company displaying a China National Wildlife Mark (CNWM)²⁹ which states that the skins were sourced from African elephants.³⁰



Processed elephant skin (制象皮 "zhi xiang pi") powder produced by Beijing Chunfeng Pharmaceutical Co Ltd 北京春风药业有限公司. The source of the elephant skin powder is listed as Zimbabwe.



成分 **象皮(制)**; 血石; 蜂蜡
 功能主治 去痛生肌, 消
 用法用量 外用, 摊于脱
 规格 每瓶装30g, 50
 批准文号 国药准字Z12

Patent ointment (橡皮生肌膏 "xiang pi sheng ji gao") containing elephant skin, produced by Tianjin Daren Tang Jing Wan Hong Pharmaceutical Co Ltd 天津达仁堂京万红药业有限公司. This company also produces patent medicine that contains pangolin scales.



【药品名称】
 通用名称：正骨膏
 【成分】
 当归、木鳖子、党参、紫草、防风、延胡索、甘草、熟地黄、羌活、陈皮、防己、赤芍、枸杞子 **象皮**、杜仲、川牛膝、苍术、人参、海桐皮、附子、天麻、玉竹、僵蚕、白芷、补骨脂、白术、黄芪、透骨草、锁阳、大黄、远志、淫羊藿、独活、白芍、续断、半夏、狗脊、首乌、甘松、川芎、龟甲、石南藤、粉萆薢、细辛、秦艽、川乌、干姜、天南星、山药、草乌、牡丹皮、淫苈、木瓜、红花、降香、五加皮、巴戟天、地黄、苏木、血余炭、骨碎补、肉桂、三七、向天蓉、没药、佛手、白芨、人工牛黄、乳香 **穿山甲**、龙骨、血竭、地骨皮、人工麝香、儿茶、鹿茸、冰片、珍珠、木香。

Patent medicine containing elephant skin and pangolin (marked in blue), produced by Henan Huafeng Pharmaceutical Co Ltd 河南华峰制药有限公司.



Risk of spread of zoonotic diseases

Since the start of the COVID-19 pandemic, the concept of One Health has gained traction,³² an approach to public health which recognises the interdependency of the wellbeing of people, animals and the environment.

Biodiversity is essential for a healthy environment. Overexploitation of any wildlife species, regardless of legality, disrupts the delicate balance of our global ecosystems, which in turn negatively impacts the stability of water sources, food production and the climate.

To meet the needs of the TCM industry, whether through sourcing from captive facilities or from the wild, animals need to be moved across large distances in unnaturally high concentrations at the supply, transit and processing levels of the trade chain. This brings different species into close contact one other and with humans, a known risk for zoonotic and emerging infectious diseases, as the COVID-19 pandemic has brought to light.³³

Popularisation of TCM in Africa

Many African governments have welcomed large-scale investment from China and have joined China's BRI.^{34,35} This has enabled China to wield considerable diplomatic influence and power in Africa, paving the way for the expansion of TCM on the continent.

Among those which have agreements with China to develop traditional medicine are Cameroon, Mozambique, Nigeria, South Africa, Tanzania and Togo.^{36,37,38} By officially signing up to promote TCM domestically, these countries have endorsed TCM for use by their citizens. For example, South Africa and Namibia have officially endorsed TCM by recognising TCM treatments as part of their public healthcare systems,^{39,40} while Uganda has actively sought cooperation with China to promote and integrate TCM into its healthcare framework.⁴¹ Even in



other FOCAC member countries such as Zambia, where no official endorsement of TCM or bilateral agreement has been publicised, TCM clinics have been established and TCM products are openly available for sale.⁴² Crucially, all FOCAC countries are countries of concern due their involvement in illegal wildlife trade.

In the past two years, the COVID-19 pandemic presented the Chinese Government with an unexpected opportunity to globalise TCM and accelerate its promotion, both at home and abroad. The Government pushed TCM as an effective way to treat the coronavirus and among the products officially recommended was one that contained bear bile as an ingredient. In a bid to assist countries to combat COVID-19, the Chinese Government has further been sending TCM products and practitioners to Africa, Central Asia and Europe.⁴³

Additionally, Chinese ministries and medical specialists held a series of video conferences with their counterparts from more than 40 African countries to advise on effective diagnostics and treatments for COVID-19, which included the application of TCM.^{44,45} Lianhua Qingwen capsules, a herbal TCM patent drug endorsed by the Chinese Government for the treatment of COVID-19, has been registered for sale in Kenya, Mauritius, Mozambique, Uganda and Zimbabwe.⁴⁶

A 2020 study showed that products made in Asia containing pangolin scales, tortoise shell or bear bile have been trafficked into South Africa for domestic consumption⁴⁷ for both traditional Asian medicine and TAFM consumers. As TCM continues to gain traction on the continent, there is a risk that TAFM consumers, who are already accustomed to products with herbal ingredients or wildlife derivatives, could become a target market for TCM pharmaceuticals.

Many African countries face challenges from weak governance, poverty and corruption. An unfettered growth of TCM in these countries would pose a serious risk to the rich biodiversity found in these jurisdictions, potentially exacerbating poaching and creating a channel for illegal trade.

Above: TCM shops are becoming more common in Africa, such as this one in Johannesburg, South Africa.

Opposite, left: Commercial trade brings a range of wild animals in unnatural close contact with humans, increasing the risk of novel diseases.

Opposite, right: Traffickers capitalise on the expansion of TCM to Africa and exploit threatened species for this market.

Case study: South Africa

South Africa is a particular case for concern as it has been targeted for its TCM expansion potential.^{48,49} The country is at risk of the exploitation of threatened wildlife for TCM for several reasons, encompassing its rich biodiversity, a complicated legislative system, documented corruption, a strong pro-trade approach to its fauna and flora and official endorsement of TCM.

South Africa has been actively lobbying to resume the international trade in ivory from the region and the Northern Cape provincial government actively supports the commercialisation of rhino horn for medicinal purposes.⁵⁰ Its commercial breeding of big cats has also been a recurrent concern for conservationists and CITES Parties, especially as its wildlife protection legislation does not cover non-native species, allowing the exploitation of captive tigers.

South Africa has enacted several animal welfare and wildlife protection laws. However, each of its nine provinces has its own local government, regulations and enforcement infrastructure, which undermine an effective response to tackling wildlife trade and reducing demand.

Legislation encourages private ownership of wildlife and endorses industries devoted to commercial wildlife breeding, trophy hunting and wildlife trade. Although there have been strict crackdowns on poachers, the country has yet to prove it can consistently bring high level traffickers to justice.⁵¹

In 2020, the South African Government set up a high-level panel of experts to review its policies, legislation and practices on the protection and management of elephants, leopards, lions and rhinos. The panel concluded that the “9+1+1” governance of the wildlife sector (which stands for “nine provinces, one national environment ministry and one national agriculture ministry”) is inefficient. It recommended the relevant legislation be revised and unified, that the Government should not aim to open international trade in ivory or rhino horn under current conditions and that it should stop the captive breeding of lions.⁵² However, the recommendations faced strong opposition from pro-use industry and interest groups and it remains uncertain if they can be implemented through official policies.

As far as the TCM industry is concerned, the Chinese media has regularly reported that it has expanded significantly in South Africa during the past two decades.⁴⁸ Despite this, there is very little public information on the production and demand for TCM in South Africa.

In 2013, the Minister of Health officially recognised complementary medicine as a category of public healthcare and TCM as one of its seven major disciplines. The decision was implemented through the amendment of a pre-existing law in 2017.⁵³ Currently, TCM professionals are regulated by the Allied Health Practitioners Council of South Africa,

Hon A Masondo (Mr)
Chairperson: National Council of Provinces

COMMENTS ON REGULATIONS

Regulations: Subordinate legislation relating to domestic trade in Rhinoceros Horn issued in terms of National Environmental Management: Biodiversity Act, 2004


Act number: Act No 10, 2004

Date of deliberation: Friday, 08 November 2019

Position of the Legislature: The legislature supports the propose regulations with the following input:

a. The regulations are welcomed for the intended purpose.

b. The three years imposed on the prohibition of rhino trade should be reviewed, in order to expedite the process of legalising commercialisation of rhino horn for medical purposes.


Signature:
SPEAKER

11.11.2019
Date:

Figure 1. A public notice issued in 2019 by the Northern Cape government supporting the use of rhino horn for medical purposes.

Figure 2. Product sold at a Chinese-owned supermarket in Johannesburg using the image of a pangolin to advertise its effectiveness.



under the Department of Health, while TCM patent medicines are regulated by the South African Health Products Regulatory Authority (SAPHRA).³⁹ According to guidelines issued by SAPHRA for the registration of new complementary medicines, “Traditional Chinese, Ayurvedic and Unani substances, in addition to herbal substances, may contain substances of animal or mineral origin”.⁵⁴



Figure 3. A product labelled as tiger bone wine was displayed on the counter of a Chinese-owned shop in Johannesburg.



Figure 4. TCM products produced by a South African brand, said to be utilising both imported and locally sourced ingredients.

Figure 5. Supplementary TCM food product sold at a Chinese-owned shop in Johannesburg and claiming to contain tortoise shell.⁵⁹



EIA is concerned that TCM pharmaceutical companies are seeking to take advantage of this by establishing production lines in-country or sourcing wildlife ingredients from local breeders, Government stockpiles or wildlife traffickers. For example, in 2018, Beijing Tong Ren Tang, one of the most prominent global TCM companies, claimed it had established a sizable presence in South Africa with five shops and plans to

further expand by building an entire supply chain from the cultivation of ingredients and their sourcing, to processing, production and marketing to meet the needs of African countries and for export back to the Chinese market.^{55,56} Another interview with the company's branch in Johannesburg specifically stated that the firm planned to source animal and plant ingredients locally in Africa to strengthen its supply chain.⁵⁷

Figure 6. TCM ingredients including tortoise shell (highlighted in red) are available from Chinese-owned supermarkets in Johannesburg.



A recent field trip by EIA to Johannesburg to better understand the reality on the ground found that TCM products, including some containing wildlife ingredients, are easily accessible. Some of the key findings from the field trip are listed below.

A Chinese supermarket on Commissioner Street, in Old Chinatown, was found to be selling a TCM product, Qushi Jiedu Wan, with packaging that suggested it contains pangolin. Online research showed that the product was previously marketed as Pangolin Qushi Jiedu Wan and was denounced by authorities in China as an unregistered, counterfeit drug.⁵⁸ Another TCM shop on Commissioner Street displayed a package of tiger bone wine which resembles a Tong Ren Tang product discontinued in 1993. It is unclear if tiger bone wine was actually sold or if the shop was using it as a marketing ploy. Also sold was a locally registered TCM product brand which is marketed as using both local and imported herbal ingredients.

Other TCM products sold containing animal ingredients include buffalo horn and ox bezoar. Given that the Pharmacopeia defines buffalo horn as that of Asian water buffalos, it is likely that the powder was imported from China. Ox bezoar, however, can be sourced locally by traders in Africa.

At least one store in the new Chinatown in Johannesburg was found to be selling tortoise shell, both as an ingredient and medicinal food product. Finally, the supermarket on Commissioner Street stocked a range of TCM ingredients including what was labelled as rhino skin. As no rhino skin can be legally traded in China, if the content matched the label, it would be a clear signal that African wildlife is being illegally sourced for TCM consumption.

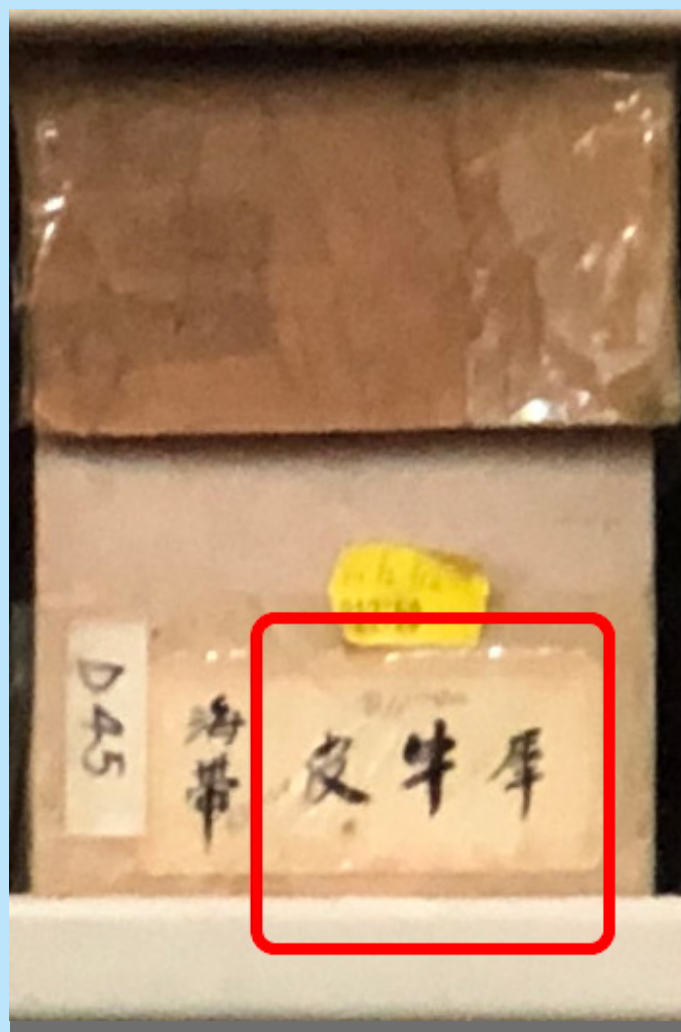


Figure 7. At one of the Chinese-owned shops, a TCM ingredient box was labelled as containing rhino skin

Figure 8. Elephant skin for sale at the Faraday Market in September 2021



Figure 9. Pangolin scales for sale at the Faraday Market in September 2021



Initial observation suggested that TCM products are purchased both by Chinese diaspora as well as local South Africans. A Chinese journal article stated that the import and sale of TCM ingredients in South Africa are regulated by the Department of Agriculture, alone or together with the Department of Health.⁴⁸ This implies a lack of drug safety control as TCM prescriptions often involve the patients buying different ingredients to be prepared at home. As a counterfeit drug was observed at a supermarket, there is also the concern that traders may be importing and selling these products as groceries, circumventing SAPHRA control.

Poorly regulated TCM products on the market present a potential public health and safety concern which should be addressed.

Moreover, the field trip revealed that Faraday Market, one of Johannesburg's most established TAFM markets, continues to operate in full swing. A visit to the market revealed a variety of endangered species being openly sold, including pangolin scales, leopard pelts and

vultures. An A4 size piece of elephant skin was flagrantly on display, priced at R500 (\$33). This is a clear violation of the wildlife protection legislation. One vendor specified that Chinese buyers visit the market, although none were observed by EIA and the claim was later contradicted by a different vendor. Regardless, the openness with which threatened species are illegally sold at the market is a stark reminder that these products could very easily enter the TCM supply chain.

TCM appears to offer a more affordable treatment option. For example, over-the-counter TCM products observed were cheaper than conventional drugs. The consultation fees for patients at three TCM clinics in Johannesburg ranged between R200-875 (\$13-59), depending on the location of the clinic, the higher end of which is comparable with the fee for conventional healthcare. Initial research suggests that the costs for TCM treatments can be claimed back through health insurance, which would further reduce the cost for the consumer.



Recommendations

In order to effectively protect biodiversity and properly implement the One Health approach, governments must promote a sustainable relationship with the environment based on long-term planning and a precautionary approach.

Taking South Africa as an example, its Constitution guarantees that all people should have the right to “an environment that is not harmful to their health or wellbeing ... to have the environment protected for the benefit of present and future generations”. This should not be compromised by short-term planning or unsustainable investments.

It is paramount that African countries benefit from economic, healthcare and infrastructure development to improve wellbeing and quality of life. However, it is equally important that such development takes place in line with an holistic approach which includes safeguarding the health of the environment and its people in the long term. Robust laws, adequate resources for management authorities and law enforcement agencies and transparency in the development and implementation of regulations underpin such success.



The challenge	Recommendation
Inadequate wildlife legislation	<p>Governments should revise their laws to explicitly prohibit any use of threatened species for medicinal purposes regardless of source (i.e. wild or captive-bred), if such prohibitions are not already in place.</p> <p>In the process of integrating and regulating TCM, governments should prohibit the use of any threatened species, including captive-bred specimens, as ingredients.</p>
Inadequate law enforcement and monitoring of TCM trade	<p>TCM, both as raw ingredients and as fully processed products, should be transparently regulated by the relevant drug safety authority.</p> <p>Law enforcement authorities should ensure proper declaration of TCM products throughout the customs import and export process.</p> <p>They should also ensure that trade only occurs with the necessary permits in place and that any improper activity is investigated and subject to appropriate penalties.</p>
The TCM sector utilising threatened wildlife	<p>Governments should collaborate with relevant stakeholders to implement targeted behaviour change interventions to dissuade TCM practitioners and traders from using threatened species as ingredients and as a marketing tool to advertise their products (for example on product packaging).</p> <p>BRI projects and TCM companies should adhere to strict environmental, social and governance principles and cease the use of threatened species in TCM.</p>
Lack of information about the development of TCM in Africa	<p>Governments should increase transparency around bilateral agreements and regulatory processes, allowing independent monitoring and research into the expanding footprint of TCM in Africa.</p>



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