

Ejiao and the Donkey Hide Trade

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Ejiao (eh-gee-yow) is a popular traditional Chinese medicine (TCM) that is derived from gelatin found in donkey hides. Users of ejiao consider it a blood tonic and may take it to enrich blood, cure anemia, stop bleeding, improve the immune system, prevent cancer, and treat insomnia and dizziness, among other purposes. The demand for ejiao has increased significantly in recent years, overwhelming the Chinese supply of donkeys (Equus asinus) and leading suppliers to slaughter donkeys in developing countries and export their hides to China. The donkey hide trade centers on Asia, the Americas, and Africa. Suppliers slaughter donkeys in several countries in these regions and export the donkey skins to factories in China for ejiao production. According to some estimates, between 2.3 million and 4.8 million donkeys are slaughtered annually for their hides to support ejiao production.

At this rate, several stakeholders assert that legal and illegal donkey hide trade might threaten the global and certain regional populations of wild and domesticated donkeys. The Food and Agriculture Organization of the United Nations reported that the global donkey population increased from 41.9 million in 2001 to 53.0 million in 2021; however, global data showing an increase in donkeys may conceal decreases in certain regions or in countries with smaller donkey populations. For example, the donkey population in Botswana declined approximately 70% (351,421 heads to 104,536 heads) from 2011 to 2021, prompting some stakeholders to assert that the donkey hide trade is a threat to donkeys in Botswana. Decreases in donkey populations in certain regions may not be due solely to the donkey hide trade. For example, some scientists contend that economic development and an increase of mechanized transport may drive decreases in donkey populations. Uncertainty over how various factors affect donkey populations makes the donkey hide trade's effects on donkey populations difficult to determine.

The trade of donkey hides can be legal or illegal, depending on where and how the donkeys are acquired and killed and whether their hides are exported directly to China. China permits the import of hides from nonedible species of *Equus* spp., including donkeys, from 23 countries around the world. Some of these (and other) countries, however, have enacted laws to ban or regulate the slaughter or trade of donkeys. According to some stakeholders, these bans have increased the illegal trade in donkey hides, which some assert often parallels the illegal trade in other species. There are no formal protections for domesticated donkeys under international wildlife trade conventions, and each country is responsible for implementing regulations and laws to address the trade. The United States has no laws or regulations that directly address the trade in donkey hides and ejiao from domesticated donkeys. The Endangered Species Act would prohibit the trade of Asian and African wild donkeys, since these animals are listed as endangered under the act. The Lacey Act would prohibit the import to and sale of in the United States any donkey hides or ejiao that were illegally possessed or taken from wild donkeys in a foreign country. Some stakeholders note that the trade of ejiao in the United States is fairly low compared with the trade in other countries where the demand and trade are high, such as China and Hong Kong.

The export of donkeys to China for use in ejiao raises concerns about the status of global and regional donkey populations; the effects of donkey scarcity for communities in developing countries; the potential for the trade to transmit zoonotic diseases; and China's influence in Africa, as Chinese suppliers target several countries in Africa for donkeys. These concerns are shared by some in Congress. A bill introduced in the 117th Congress and cosponsored by nine Members (H.R. 5203) would have banned the sale or transport in interstate or foreign commerce of ejiao or products containing ejiao. Congress might consider several approaches to address the donkey hide and ejiao trade. These approaches may include (1) enacting legislation that would ban the import and export of ejiao into and out of the United States; (2) supporting programs and activities to reduce demand for ejiao; (3) assisting in activities that support the sustainable, legal trade of donkey hides in developing countries; and (4) providing resources to improve data collection on the legal donkey hide trade and to investigate the illegal donkey hide trade.

SUMMARY

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Pervaze A. Sheikh Specialist in Natural **Resources Policy**

Elisabeth Lohre Research Assistant

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Introduction

Ejiao (eh-gee-yow) is a popular traditional Chinese medicine (TCM) that is derived from gelatin found in donkey hides.¹ Users of ejiao consider it a *blood tonic* and may take it to enrich blood, cure anemia, stop bleeding, improve the immune system, prevent cancer, and treat insomnia and dizziness, among other purposes.² The demand for ejiao has increased significantly in recent years, overwhelming the Chinese supply of donkeys (*Equus asinus*).³ According to some stakeholders, this situation has led Chinese slaughterhouses to establish facilities in foreign countries (notably in Africa) to slaughter donkeys and export hides.⁴ Some stakeholders estimate that, globally, between 2.3 million and 4.8 million donkeys are slaughtered annually for their hides to support ejiao production.⁵ This practice raises concerns about the status of global and regional donkey populations, the effects of donkey scarcity on communities in developing countries, and China's influence in Africa.⁶ Some in Congress share these concerns. A bill introduced in the 117th Congress and cosponsored by nine Members (H.R. 5203) would have banned the sale or transport in interstate or foreign commerce of ejiao or products containing ejiao. As of the publication date of this report, no bills have been introduced in the 118th Congress that would address the donkey hide trade and ejiao.

Ejiao Production and Use

Ejiao is made by boiling donkey hides to extract collagen, which is then used to produce a gelatin that is usually mixed with herbs and other ingredients. Ejiao is marketed in many forms—from bars and pills to liquids.⁷ Ejiao gets its name from the county in which its use originated more than 2,000 years ago—Dong'e—in the Shandong Province of eastern China.⁸ Traditionally, ejiao production involved boiling donkey hides using water extracted from the Ejing well in Dong'e.⁹

¹ Ejiao is pronounced *eh-gee-yow*. Christa Leste-Lasserre, "Chinese Trade in Hides Has Led to Global Donkey Massacre," *Science*, December 12, 2019.

² Richard Bennett and Simone Pfuderer, "The Potential for New Donkey Farming Systems to Supply the Growing Demand for Hides," *Animals*, vol. 10, no. 4 (2020). Hereinafter, Bennett and Pfuderer, "New Donkey Farming Systems;" Dimpho Malebogo Matlhola and Ruishan Chen, "Telecoupling of the Trade of Donkey-Hides Between Botswana and China: Challenges and Opportunities," *Sustainability*, vol. 12, no. 1730 (2020), pp. 1-10. Hereinafter, Matlhola and Chen, "Telecoupling of the Trade of Donkey-Hides."

³ China's donkey population declined from 9.2 million to 1.9 million between 2001 and 2021, according to the Food and Agriculture Organization of the United Nations (FAO), FAOStat, "Crops and Livestock Data," 2022, at https://www.fao.org/faostat/en/#home.

⁴ Matlhola and Chen, "Telecoupling of the Trade of Donkey-Hides."

⁵ The Donkey Sanctuary, *Report 1: The Global Trade in Donkey Skins—A Ticking Time Bomb*, 2022, pp. 1-52, at https://www.thedonkeysanctuary.org.uk/sites/uk/files/2022-06/global-trade-in-donkey-skins-report-1.pdf. Hereinafter, Donkey Sanctuary, Report 1, *Global Trade in Donkey Skins*.

⁶ Lauren Johnston, *China, Africa and the Market for Donkeys: Keeping the Cart Behind the Donkey*, South African Institute of International Affairs, occasional paper 339, January 2023, pp. 1-31, at https://saiia.org.za/wp-content/uploads/2023/01/SAIIA_OP-339_ChinaAfricaDonkeys.pdf. Hereinafter, Johnston, *China, Africa and the Market for Donkeys*.

⁷ Teruyuki Kubo and Zhong-Zhen Zhao, "History of the Chinese Medicinal Gelatin," *Chinese Medicine and Culture*, vol. 5, no. 1 (2022), pp. 39-45. Hereinafter, Kubo and Zhao, "Chinese Medicinal Gelatin"; The Donkey Sanctuary, "What Is Ejiao?," at https://www.thedonkeysanctuary.org.uk/end-the-donkey-skin-trade/what-is-ejiao.

⁸ Kubo and Zhao, "Chinese Medicinal Gelatin."

⁹ Ibid.

Producers attest that water in Dong'e has the ideal combination of minerals, pH, and density to create optimal ejiao.¹⁰

In the past, ejiao—once considered a luxury product—was available only to affluent Chinese. Targeted marketing of TCM, the rising wealth of the growing Chinese middle class, and an increase in China's elderly population have led to greater demand for ejiao, according to some stakeholders.¹¹ As a result, the price of and Chinese market for ejiao have increased in recent years. According to one source, the price of ejiao increased from 100 yuan (~\$15) per 500 grams in the mid-2000s to 2,986 yuan (~\$442) for the same amount in nominal 2018 dollars.¹² According to one source, the Chinese market for ejiao increased from approximately \$3.2 billion in 2013 to \$7.8 billion in 2021 in nominal dollars.¹³ One report noted that approximately 90% of the profits from ejiao go to the ejiao producer rather than to the donkey owner, making the donkey farming business in China and overseas less appealing for ranchers than raising other livestock.¹⁴

It is unclear how much ejiao is being imported into the United States. One stakeholder group estimates the United States imports \$12 million worth of ejiao each year, which is significantly less than the leading importers of ejiao, China and Hong Kong.¹⁵

Trade in Donkey Hides

The donkey hide trade for creating ejiao centers on Asia, the Americas, and Africa. Suppliers slaughter donkeys in several countries in these regions and export the donkey skins to factories in China for ejiao production. Observers note that, outside of China, donkeys are largely exported from South Africa, Peru, and Brazil.¹⁶ Some stakeholders note that monitoring the donkey hide trade is challenging due to the lack of accurate data at the local and regional levels in some countries.¹⁷ Furthermore, some scientists note that the lack of a distinct tariff code for donkey hides under the Harmonized Tariff system makes it difficult to distinguish donkey hides from other categories of hides in trade data.¹⁸ Data on donkey hide exports from and ejiao imports into the United States are limited. Some stakeholders have anecdotally noted that the United States is not a significant exporter of donkey hides but is an importer of ejiao. Ejiao is also readily available online to consumers in the United States.

¹⁰ Dong'e E'jiao Co. Ltd., "Dong E Water," at https://en.dongeejiao.com/water/index.html.

¹¹ Bennett and Pfuderer, "New Donkey Farming Systems."

¹² Xin Wen, "Makers of Lucrative TCM Cast Net Wider for Future Success," *China Daily*, March 2018, at https://www.chinadailyhk.com/articles/70/46/20/1522213575874.html.

¹³ Huajing Information Network, "Market Size, Output, Market Competition Pattern and Development Trend of China's Donkey-Hide Gelatin Industry in 2021," September 6, 2022, at https://new.qq.com/rain/a/20220609A032D100.

¹⁴ Kuailede Nongcunniu, "The Prices of Donkey Meat and Skin Are Very High, So Why Are Farmers Reluctant to Raise Donkeys? What Is the Reason?," *Baijiahao, Baidu*, July 25, 2022.

¹⁵ Brooke, *The Donkey Skin Trade: Policy Brief on the Worldwide Impact*, at https://www.thebrooke.org/sites/default/ files/brooke-donkey-skin-trade-policy-brief-2022.pdf (hereinafter, Brooke, *Donkey Skin Trade: Policy Brief*); Donkey Sanctuary, *Global Trade in Donkey Skins*.

¹⁶ The Donkey Sanctuary, Report 1, "The Donkey Skin Trade," at https://www.thedonkeysanctuary.org.uk/end-the-donkey-skin-trade.

¹⁷ Ibid.

¹⁸ Shan Su et al., "The Link Between Wildlife Trade and the Global Donkey Skin Product Network," *Conservation Science and Practice*, vol. 4, no. 6 (2022), pp. 1-13. Hereinafter, Su et al., "Link Between Wildlife Trade."

The trade of donkey hides can be legal or illegal, depending on where and how the donkeys are acquired and killed and if the hides are exported directly to China. China permits the import of hides from nonedible species of *Equus* spp. (including donkeys) from 23 countries around the world.¹⁹ However, some of these countries—and others—have enacted laws to ban or regulate the slaughter or trade of donkeys; such countries include Uganda, Tanzania, Burkina Faso, Botswana, Côte d'Ivoire, Niger, Mali, Senegal, Ghana, Sudan, South Sudan, Namibia, Zimbabwe, and Nigeria (see **Figure 1**).²⁰ According to stakeholders, certain countries' bans on the slaughter and export of donkeys have stimulated the illegal donkey trade in those countries.²¹



Figure 1. Countries That Import, Export, or Ban the Trade of Donkey Hides

Source: CRS, adapted from information in the Donkey Sanctuary, *Under the Skin: Update on the Global Crisis for Donkeys and the People Who Depend on Them*, 2019, p. 30, at https://www.thedonkeysanctuary.org.uk/sites/uk/files/2019-11/under-the-skin-report-revised-2019.pdf, and other sources that reflect changes in law and regulations as of January 2023.

Variation in national laws and regulations, as well as international designations, creates a complex legal framework for regulating and enforcing the legal donkey trade, which has, in part, stimulated the illegal trade of donkey hides.²² There are no formal protections for domesticated donkeys under international wildlife trade conventions. For example, domesticated donkeys are not listed under the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES).²³ However, certain wild species of donkey, such as the African wild ass

¹⁹ Ibid.

²⁰ Bennett and Pfuderer, "New Donkey Farming Systems."

²¹ Lauren Johnston, "China's Demand for Africa's Donkeys Is Rising. Why It's Time to Control the Trade," *The Conversation*, February 6, 2023. Hereinafter, Johnston, "China's Demand for Africa's Donkeys."

²² Ibid.

²³ The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulates the international trade in animals and plants whose survival may be threatened by trade. These animals, plants, and their parts or derivatives are subject to varying degrees of trade regulation, based on their listing in three appendixes of the

(*Equus africanus*) and Asiatic wild ass (*Equus hemionus*), are listed under Appendix I of CITES, which largely bans commercial trade of the species and their body parts. Laws in the United States address wild species of donkeys, not domesticated donkeys. The Endangered Species Act (ESA; 16 U.S.C. §§1531-1544) lists the African and Asiatic wild ass as endangered and prohibits their import into the United States.²⁴ Further, the Lacey Act (16 U.S.C. §§3371-3378) would prohibit the import into and sale of in the United States any donkey hides or ejiao that were illegally possessed or taken from wild donkeys in a foreign country. The Lacey Act does not apply to domesticated animals. These designations do not significantly affect the overall trade in donkey hides, because the trade is largely in domesticated donkeys.

The illegal trade consists largely of the theft and illegal killing of donkeys and the illegal export of donkey hides. The extent of the illegal trade is largely unknown, but several stakeholders have suggested it is increasing as (1) the demand for ejiao grows, (2) more laws regulating trade and slaughter are enacted, and (3) the price of donkey hides increases.²⁵

Some stakeholders report that those involved in the broader illegal wildlife trade are conducting the illegal trade in donkey hides. They assert that donkey hides are being shipped alongside other illegally trafficked wildlife and wildlife products,²⁶ a practice referred to as *parallel trafficking*. Donkey hides reportedly have been transported with trafficked pangolin scales, rhinoceros bone, and ivory, among other products. According to stakeholders, parallel trafficking makes it easier to transport wildlife contraband because routes and contacts are already in place.²⁷

Increasing demand for donkey hides in parts of Africa is leading to the legal and illegal killing of donkeys in various African countries,²⁸ which in turn is causing regional declines in donkey populations. The loss of donkeys in some regions has raised concern over the status and welfare of donkey populations and the effects of donkey loss on communities.²⁹ Rural communities in developing countries depend on donkeys for several functions, including hauling goods to support agriculture, transporting materials for construction, and transporting people and goods in general.³⁰ The increased demand for and reduced supply of hides could raise prices for donkeys in developing countries, potentially making donkeys unaffordable for some in rural communities. Some stakeholders estimate the price of a single donkey hide in China increased from 20 yuan (~\$3) in 2000 to about 3,000 yuan (\$445) by 2017, in nominal dollars.³¹

In addition, some scientists are concerned the donkey hide trade could be a vector for spreading zoonotic and other diseases.³² Some scientists report that donkey hides could carry and transmit

convention. Appendix I lists animals and plants that are threatened with extinction; trade in these species is authorized only in exceptional circumstances. Appendix II lists species not immediately threatened with extinction but that may become so if trade is not regulated. Appendix III lists species that are regulated within the jurisdiction of at least one CITES party.

²⁴ The CITES listing specifically excludes the domestic form of the animal.

²⁵ For example, see Matlhola and Chen, "Telecoupling of the Trade of Donkey-Hides."

²⁶ Su et al., "Link Between Wildlife Trade."

²⁷ Ibid.

²⁸ For example, see Su et al., "Link Between Wildlife Trade."

²⁹ For example, see Donkey Sanctuary, *Global Trade in Donkey Skins*.

³⁰ In Africa, donkeys can withstand harsh environments and are used to transport goods to rural markets, to extract and transport water for households, and to transport people and goods through uneven terrain. One scientist estimated that donkeys support approximately 158 million people in Africa. Brooke, *Donkey Skin Trade: Policy Brief.*

³¹ Xinhua News Agency, "China Cuts Tariffs on Donkey Hides," CGTN, Business 21:49, December 2017, at https://news.cgtn.com/news/3067444d35637a6333566d54/index.html.

³² For example, see Rachel Nuwer, "How the Global Donkey Skin Trade Risks Spreading Deadly Disease," National

certain diseases, such as African horse sickness, equine influenza, glanders, strangles, and anthrax, among others.³³

Donkey Population Trends

Several stakeholders predict the legal and illegal donkey hide trade might threaten the global and certain regional populations of wild and domesticated donkeys.³⁴ One group estimated in 2019 the trade could reduce the worldwide population of domesticated donkeys by half within five years.³⁵ This prediction is tempered by global donkey population data collected by the Food and Agriculture Organization of the United Nations (FAO) from 2001 to 2021; according to FAO, the global donkey population increased from 41.9 million in 2001 to 53.0 million in 2021 and from 51.7 million to 53.0 million from 2019 to 2021.³⁶ Trends may change or vary over time, depending on the time scale they represent. Further, global data showing an increase in donkeys may conceal decreases in certain regions or countries with smaller donkey populations. For example, the donkey population in Botswana declined approximately 70% (351,421 heads to 104,536 heads) from 2011 to 2021, prompting some stakeholders to assert that the trade is a threat to donkeys in Botswana.³⁷ A similar decrease was recorded in India, with approximately a 71% decrease (357,000 heads to 103,500 heads) in the donkey population from 2011 to 2021.³⁸ Ethiopia is the country with the most donkeys in the world; its donkey population grew approximately 75% (6.4 million heads to 11.2 million heads) from 2011 to 2021.³⁹

Decreases in donkey populations in certain regions may not be solely due to the donkey hide trade. Some scientists contend that economic development and an increase in mechanized transport may lead to decreases in donkey populations in certain regions because these advances reduce the need for donkeys for transportation.⁴⁰ Uncertainty over how much various factors affect donkey populations makes the effects of the donkey hide trade on these populations unclear and causes some stakeholders to call for more data on donkey population trends.⁴¹ Some countries are enacting new laws to address issues in tracking donkey populations and hides; for example, Tanzania is undertaking a livestock census of donkeys to measure and monitor populations.⁴²

Geographic, November 14, 2022.

³³ The Donkey Sanctuary, *Report 2: Global Trade in Donkey Skins—A Ticking Time Bomb*, 2022, at https://www.thedonkeysanctuary.org.uk/sites/uk/files/2022-11/report-2-the-global-trade-in-donkey-skins-a-ticking-time-bomb-2022.pdf.

³⁴ The reproductive rate of donkeys is a limiting factor to meeting the demands for ejiao. A female donkey (termed a *jenny*) produces offspring approximately once every 14 months.

³⁵ For example, see Donkey Sanctuary, Global Trade in Donkey Skins.

³⁶ FAO, FAOStat, "Crops and Livestock Data," 2022, at https://www.fao.org/faostat/en/#home.

³⁷ Ibid. Note that FAO uses imputed values for some years. Matlhola and Chen, "Telecoupling of the Trade of Donkey-Hides."

³⁸ FAO, FAOStat, "Crops and Livestock Data," 2022, at https://www.fao.org/faostat/en/#home. Note that the FAO uses imputed values for some years.

³⁹ Ibid. Note that FAO uses imputed values for some years.

⁴⁰ Bennett and Pfuderer, "New Donkey Farming Systems."

⁴¹ Johnston, China, Africa and the Market for Donkeys.

⁴² Judith Akalo, "Tanzania Bans Trade in Donkey, Donkey Products," Kenya Broadcasting Corporation, December 3, 2022, at https://kbc.co.ke/africa/article/33683/tanzania-bans-trade-in-donkey-donkey-products.

Considerations for Congress

Congress might consider enacting legislation that would aim to ban the import and export of ejiao into and out of the United States. For example, in the 117th Congress, H.R. 5203 would have banned in interstate or foreign commerce the sale or transport of ejiao or products containing ejiao using donkey skins. This approach could have limited the interstate trade of ejiao online and might have served as a model for other countries to emulate. The bill did not address donkey hides or the donkey hide trade. The bill garnered support in the United States from several groups associated with animal welfare and the equine industry.⁴³ This option might have a limited effect on the overall trade in donkeys, donkey hides, and ejiao and therefore on donkey populations, due to the United States' relatively limited share of the market; however, it might prompt other countries to enact similar bans.

Congress also might consider methods to reduce demand for ejiao. For example, one option might be to direct federal agencies to conduct demand-reduction campaigns in foreign countries and in the United States, potentially through public-private partnerships with nongovernmental organizations. Congress has supported and funded efforts to reduce demand for products derived from the illegal wildlife trade in the past. For example, the U.S. Fish and Wildlife Service is working to understand the demand for illegal wildlife and implementing evidence-based solutions to reduce demand, such as installations in airports that inform passengers about wildlife trafficking. Such a demand-reduction campaign might address U.S. demand for ejiao but likely would not affect Chinese demand.

In contrast to banning the trade of donkey hides and ejiao, another option might be to provide assistance to support the legal trade of donkey hides in developing countries. Some policymakers contend that efforts should be directed toward supporting the sustainable, legal trade of donkey hides. One stakeholder stated that the donkey trade with African countries might be possible if the countries were organized, formed associations, and established a dialogue with the ejiao industry in China.⁴⁴ Other stakeholders might support donkey ranching in developing countries to meet the demand for hides. For example, Pakistan is considering the creation of state-run donkey ranches to supply hides to China to meet its demand for ejiao.⁴⁵ This perspective is tempered by those concerned with the trade in Africa. The 2022 Pan-American Donkey Conference called for a 15-year moratorium on the donkey trade in Africa to allow donkey populations to recover and to create regulatory capacity to oversee the donkey hide trade.⁴⁶

Congress might wish to consider providing resources to improve data collection on the legal donkey hide trade and to investigate the illegal donkey hide trade. There is a paucity of data on regional donkey population trends and the extent of the legal and illegal trade of donkey hides, prompting some stakeholders to call for more research.⁴⁷ Further, some stakeholders note that efforts should be made to evaluate how the donkey hide trade affects smallholder farmers and

⁴³ For example, see Animal Welfare Institute, "Donkeys Die by the Millions as Ejiao Demand Soars," 2022, at https://awionline.org/awi-quarterly/summer-2022/donkeys-die-millions-ejiao-demand-soars.

⁴⁴ Johnston, "China's Demand for Africa's Donkeys."

⁴⁵ Press Trust of India, "Why China Is Showing Keen Interest in Importing Donkeys, Dogs from Pakistan," *Outlook*, February 3, 2023.

⁴⁶ This ban is encapsulated within the Dar es Salaam Declaration on Donkeys in Africa: Now and in the Future. Abuja Racheal, "Pan-African Conference Seeks 15-Year Ban on Donkey Slaughter," *Enviro-news Nigeria*, December 22, 2022.

⁴⁷ Johnston, China, Africa and the Market for Donkeys.

families in developing countries and whether China is using the donkey hide trade to exert influence in developing countries by building slaughterhouses and legalizing the trade.⁴⁸

Author Information

Pervaze A. Sheikh Specialist in Natural Resources Policy Elisabeth Lohre Research Assistant

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⁴⁸ Ibid.