The European Union must ensure that all traded wildlife, such as these tarantulas is documented and legally and sustainably sourced.

PHOTO: IBAMA ARCHIVE

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Reform wildlife trade in the European Union

Wildlife trade affects a wide variety of species (*1*), and trade numbers are growing globally (*2*). The European Union (EU) is a major hub for wildlife trade (*3*), but its wildlife trade regulations are primarily based on the adoption and adaptation of provisions written by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In 2022, the EU adopted a welcome new action plan against wildlife trafficking (*4*), but its measures fall short of ensuring that wildlife traded within the EU is thoroughly documented and sourced legally and sustainably.

The EU Trade in Wildlife Information Exchange (EU-TWIX) database (*5*) provides information about illegal trade, but the data are limited to CITES-listed species, excluding many traded species (*6*, *7*). Building on the 2022 plan, which focuses on the enforcement of existing legislation, the EU should expand the EU-TWIX database to cover all wildlife trade, including all species, legal and illegal, and regulated and unregulated. The data collected should adhere to FAIR (findable, accessible, interoperable, reusable) principles (*8*). Other countries, such as the US (*9*), already track all wildlife trade, and the EU should follow that example.

The EU Action Plan also overlooks the possibility of illegally sourced and trafficked species legally entering EU borders. Such species are subsequently traded within the EU and often later exported. To address this issue, the EU should implement a regulation comparable to the US Lacey Act, which prohibits imports that violate the laws of a specimen's country of origin (*10*). This change could fill the gaps in current regulatory frameworks and also aid in the preservation of biodiversity in nations that, owing to resource limitations, lack effective enforcement.

Finally, many legally traded species face overlooked risks, with little or no evidence of sustainable trade practices. Unsustainable trade poses potential threats to wild populations and human health (*11*). EU authorities should require evidence of the sustainable trade of all imported species and populations. Although identifying sustainability is often more challenging than determining legality, information about how trade affects legally traded species (which are not listed by CITES) can be obtained by consulting the International Union for Conservation of Nature Red List (*12*) or species experts, many of whom are already in the EU.

The EU is a global hub for unregistered, illegal, and unsustainable activities. The recent action plan is a step forward, but tracking all species, observing the laws of the species' home countries, and ensuring sustainability of legal traffic would transform the region into a model of environmental protection in relation to wildlife trade.

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COMPETING INTERESTS

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Incorporate ethics into US public health plans

In November 2023, the Centers for Disease Control and Prevention (CDC) concluded its public comment period on a new framework (*1*) to coordinate the US response to public health and zoonotic disease challenges. The proposed plan will establish an interagency One Health program that brings practitioners and academics together to improve biodefense and pandemic preparation (*2*, *3*). The initiative rightly recognizes the importance of broad scientific expertise, but it does not sufficiently incorporate public health ethics.

Zoonotic disease management is characterized by uncertainty, knowledge deficits, and conflicting interests. Public

health–based ethical analysis can clarify the available courses of action and their impacts on humans, animals, and the environment. Each course of action favors one set of interests at the expense of others, and the resulting inequities may undermine societal support for zoonotic disease control. Public skepticism and internecine conflicts are particularly concerning during disease outbreaks, when time constraints, resource limitations, and uncertainty complicate high-stakes decision-making.

Incorporating ethical analysis into US One Health zoonotic disease preparedness is vital. Other countries have applied ethics-oriented approaches that could serve as models. In Austria, the Federal Ministry of Health commissioned the development of an ethics-oriented decision-making tool to prepare veterinarians for managing zoonoses, including the consideration of animal welfare during emergency killing (*4*). The tool is now used in official training of state veterinarians in Austria (*5*). In the Netherlands, the Council on Animal Affairs, a strategic body advising the government on One Health policy assessment, includes members with ethics expertise who help reveal the value-based aspects of policy decisions that affect humans as well as animals (*6*). The UK Biological Security Strategy emphasizes a One Health approach, recognizing the need for assessing how ethical values apply in the governance of institutional and legal frameworks. The UK analysis process aims to identify the conflicting and commensurate values that underlie policies at the intersection of climate change, zoonotic disease preparedness, and animal welfare (*7*).

The Austrian, Netherlands, and UK policies show how the incorporation of ethics into public health plans can benefit animal welfare and support collaborative, long-term multiagency and interdisciplinary disease management efforts among state and nongovernmental entities. Increased attention to ethics analysis in decision-making approaches for disease management also has the potential to rekindle waning public trust in science and in public health officials.

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Mangrove forest decline on Iran's Gulf coast

Iran's mangrove forests, which cover about 9370 ha along the Persian Gulf and the Sea of Oman, are home to distinct species (*1*–*3*), store carbon (*1*, *2*), purify water (*4*), and support coastal communities (*1*). However, these forests face threats from human activities and climate change (*5*). Iran must protect its mangrove forests (*1*).

Mangrove forests harbor distinctive habitats, containing plants that have adapted to oxygen-poor environments (*1*). The diverse plant and animal species that mangroves support sustain the local food chain (*1*). The roots of trees such as *Avicennia marina* and *Rhizophora mucronata* stabilize coastal sediments, offering shelter to wildlife and fostering fertile conditions (*1*). As a transitional zone between land and sea, mangrove forests provide optimal conditions for marine life such as plants, algae, bioluminescent organisms, and juvenile fish (*1*, *3*).

Mangroves, which store 30% of Earth's carbon (*6*), also provide valuable ecosystem services. By reducing wave action and water currents, they increase carbon sequestration and reduce resuspension of microplastics in the Persian Gulf's surface waters (*4*, *7*). Mangrove forests also provide economic, social, and recreational advantages to Iran's coastal communities (*5*).

Human activities have resulted in a decline in mangrove forests. Factory construction, wastewater discharge, oil pollutants, and improper land management have polluted the mangroves on the Persian Gulf shores (*1*). Mangroves also suffer from reduced freshwater flow, imbalances between freshwater and saline water, dam construction, agricultural development, shrimp farms, and discharge from desalination plants (*1*, *8*).

Despite the deterioration of this vital resource, Iran has failed to take coordinated protective action. Insufficient funding has been allocated to preserving mangrove forests, and unsustainable policies and limited regulations have exacerbated environmental degradation (*1*). Iran's socioeconomic challenges, including poverty, unemployment, and inadequate rights and resources, have led to overexploitation and unsustainable use of mangrove forests and other natural resources (*1*, *9*).

To protect the Persian Gulf coast's mangrove forests, Iran should strengthen and rigorously enforce the relevant environmental laws and improve socioeconomic conditions to reduce local residents' reliance on them. The government should also partner with and support nongovernmental organizations that educate the public about the importance of mangroves and that work toward achieving mangrove-related conservation goals. Iran should base its policies on those of developed nations, including the European Union, that have implemented plans to completely prevent deforestation by 2030 (*10*).

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