

MONGOLIA'S ENVIRONMENTAL CRISES

An Introduction

By Morris Rossabi

The Communist government that controlled Mongolia from 1921 to 1990 contributed to environmental degradation and had a devastating influence on the land, air, and water, as did the development of a mostly unregulated economy after 1990.

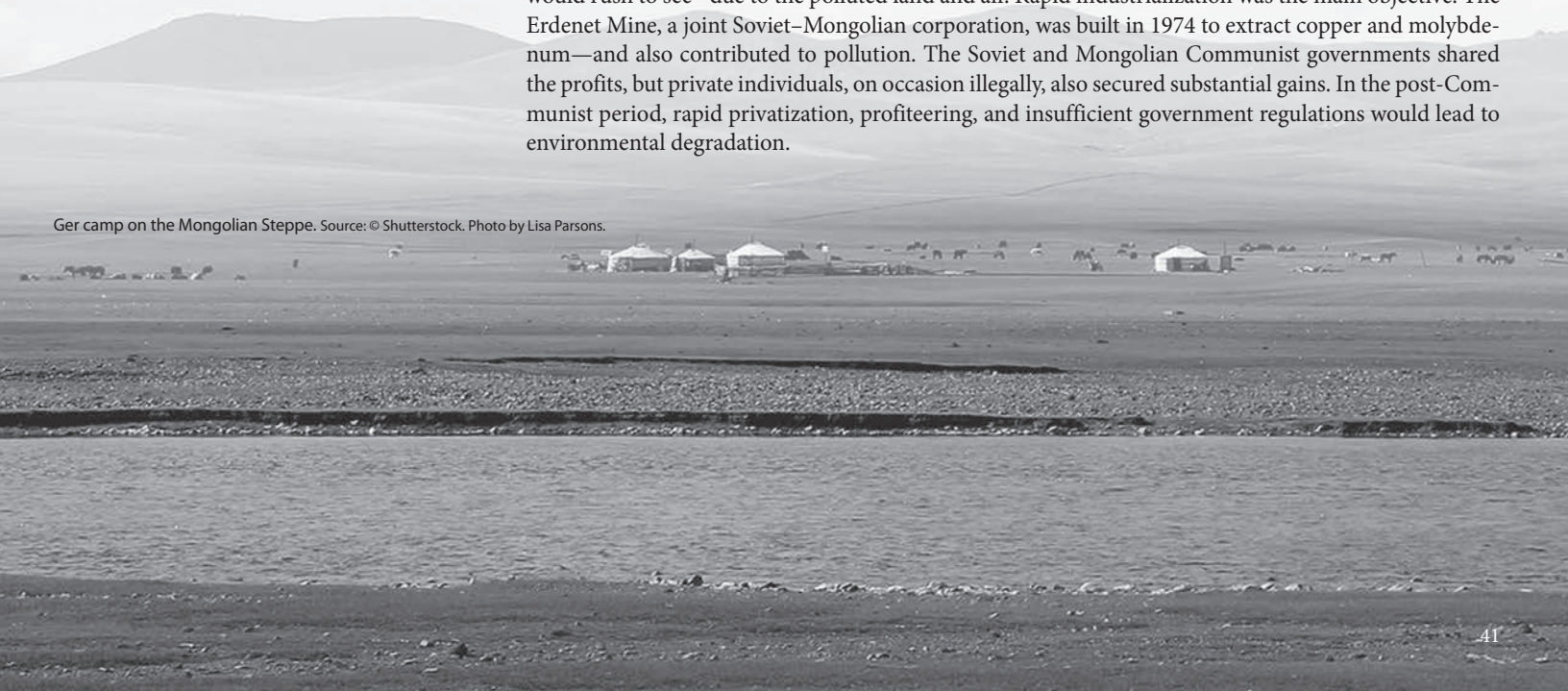
In the US, China, Russia, and other countries with a sizable population, it is often difficult to discern the effects of climate change and other environmental afflictions.¹ A country with a small population offers a greater opportunity to observe the implications of environmental crises. A study of Mongolia, with a population of approximately three million, provides a clearer view, although it is important to remember that Mongolia is quite distinct from these other lands due to its daunting climate, limited soil cover, and frequent natural disasters.

Mongolia is the world's eighteenth-largest country and about three times the size of France. With its relatively limited population, it is the least densely populated country in the world. It has meager arable land and has little productive soil. It has faced, partly due to climate change, an increased frequency in the number of *zuds* (disastrous winters with almost overwhelming amounts of snow and ice), and its cold climate and short growing season preclude its developing a sedentary agricultural economy.² Instead, the abundant grasslands in the center of the country are optimal for nomadic pastoralism. The Gobi Desert in the south supports only a small group of herders, while the Altai, Khentii, and Khangai mountains in the north and west limit their living spaces. Approximately 30 percent of the population is composed of herders, but an increasing number are abandoning herding because of pressures to be described later. Mongolia has proven to be fascinating to foreigners, partly due to a romantic view of herders; partly to the purported exploits of Chinggis Khan, the founder of the Mongolian Empire; and also due to its remoteness and its inaccessibility for much of the twentieth century.

The small Mongolian population ought to have prevented considerable damage to the environment, but this has not been the case. The land and waters have traditionally been pristine, as most Mongolians have, from earliest times, respected their living spaces. Khans, princes, monks, and the Communist heads of collectives, known as *negdels*, apportioned animals and grazing grounds to protect the carrying capacities of the steppes. For example, recognizing that goats ate plants down to their roots, which destroyed the grasslands and prevented reseeding, these leaders mandated that sheep outnumber goats in their herds. Nonetheless, despite its minuscule population and vast territory, modern Mongolia has faced environmental problems and challenges in its habitat. Humans are culpable for most of these dilemmas, including increasing desertification. Man-made disasters have generated crises, with harm to water supply, forests, and land.

The Communist government that controlled Mongolia from 1921 to 1990 contributed to environmental degradation and had a devastating influence on the land, air, and water, as did the development of a mostly unregulated economy after 1990. The Communist state constructed coal-burning power plants for the capital city of Ulaanbaatar, laid out roads and railways, and initiated open-pit mining, all of which resulted in air pollution and considerable harm to the land. As one observer has written, the various factories and mines established in Darkhan in the Communist period are "not somewhere you would rush to see"³ due to the polluted land and air. Rapid industrialization was the main objective. The Erdenet Mine, a joint Soviet–Mongolian corporation, was built in 1974 to extract copper and molybdenum—and also contributed to pollution. The Soviet and Mongolian Communist governments shared the profits, but private individuals, on occasion illegally, also secured substantial gains. In the post-Communist period, rapid privatization, profiteering, and insufficient government regulations would lead to environmental degradation.

Ger camp on the Mongolian Steppe. Source: © Shutterstock. Photo by Lisa Parsons.



Dismantling the *Negdels*

The collapse of Communism in 1990 overturned the *negdels*. The *negdels*, which the Communist government had, with the help of the USSR, initiated in the mid-1950s, eliminated most private ownership of animals. Instead, herders received wages to tend the animals owned by the *negdels*. In the early 1990s, the USSR, Mongolia's principal supplier of foreign aid and technical assistance, and most important trade partner, fell apart. The Mongols turned for aid and trade to the International Monetary Fund, the Asian Development Bank, the World Bank, and the US Agency for International Development, which favored privatization and required abolition of the *negdels* in return for loans and grants. These agencies and the Mongolians who supported them feared a regression to Communism and an all-powerful government, and thus proposed immediate privatization, a market economy, and a state that played a reduced role in the economy—a policy of so-called “shock therapy.” Yet few Mongolians had experience with privatization, and such a rapid

transition to a market economy whose institutions and practices were barely known to the population, together with increasing levels of corruption, would impact society and the environment.

The *negdel* leaders were authoritarian, but the collectives had provided trucks to transport animals to market, hay for additional feed, and newspapers and radios that supplied information on climate. They also offered training in herding, constructed and maintained wells, and provided rudimentary health care and education, mostly in boarding schools, for herders' children.

The precipitous abandonment of the *negdels* in 1990 and 1991 led to serious adverse effects. Within a year or two, the herds were privatized, and a few well-connected government officials and *negdel* leaders profited from this hurried and chaotic process of shock therapy. Most Mongolians viewed “privatization as an unfair process which distributed state property to relatives, friends, and powerful business groups.”⁴ A Danish anthropologist offered a similar assessment, “The final privatization process was frequently reported to be chaotic . . . enabling *negdel* leaders to maintain control over key assets.”⁵

A small group gained a disproportionate share of the *negdels'* animals, trucks, and other equipment. Income inequality accelerated, with a few acquiring thousands of animals, as well as machinery, vehicles, and even laborers to tend the herds, while most scarcely had sufficient animals to eke out a living. Many were forced to abandon herding and move to Ulaanbaatar, the capital city, to find work. The new post-Communist government

had a lesser role in the economy and did not have the resources to provide much assistance to herders.

The post-Communist government also did not provide the herders with transport of their herds to market, compelling them to move closer to

Transparency International: Mongolia

The question of levels of corruption in Mongolia is important. Transparency International is a highly respected NGO that utilizes a variety of sources to investigate both government and corporate corruption.

The Corruption Perceptions Index (CPI) scores and ranks countries/territories based on how corrupt a country's public sector is perceived to be by experts and business executives. It is a composite index, a combination of thirteen surveys and assessments of corruption, collected by a variety of reputable institutions. A score is given to each country based off the data collected in these surveys out of 100, where zero is the most corrupt and 100 the least corrupt. For 2020, twelve institutions evaluated these surveys and assessments. Examples of participating institutions include *The Economist*; Freedom House, a democracy watchdog; The World Economic Forum, an international NGO; and Bertelsmann Stiftung, a German entrepreneurial foundation.

CPI Year	Score (out of 100)	Rank (Rank/Number of countries and territories rated)
2012:	36	94/176
2016:	87	87/116
2020:	35	111/180

Student Discussion Question

1. Are there other sources of corruption, discussed in this essay, and if so, how are they different from Transparency International?

Source: Transparency International, “Corruption Perceptions Index 2012, 2016, and 2020,” accessed April 19, 2021, <https://tinyurl.com/68zr9jzx>.

Assist-A-Scholar is a member sponsorship campaign aimed at ensuring that everyone in the Asian Studies community can access the benefits of AAS membership.

Between May 17 and August 17, 2021, we are seeking donations to this campaign. All donations will be matched 100% by funding from the Henry Luce Foundation, up to \$20,000 (meaning that our total goal amount for the campaign is \$40,000).

Coming together as a community, we can do great things.

ASSIST A SCHOLAR
CAMPAIGN

ASSOCIATION FOR
ASIAN STUDIES

asianstudies.org/assist-a-scholar-campaign/

DONATE TODAY!

towns to sell their animals and animal products. Because these herdsmen now no longer moved their animals semiannually or even more frequently, they depleted the neighboring grasslands. This situation contributed to desertification. Adding to the difficulties for herders, the chief export market for meat had been the USSR, but the disappearance of the old Soviet state and its decline translated into a two-thirds reduction in its consumption of Mongolian meat. Mongolia's main market for meat disappeared.

Market Economy and Herders

The introduction of a market economy exacerbated the pressure on the environment. Shepherders, progressively more aware of the initial export market for cashmere, increased the total number of animals, particularly goats, in their herds. This subverted the practice of sheep outnumbering goats, which had been adopted to avert the damage the grazing habits of goats imposed on the grasslands.

In 2019, the animal census counted thirty-two million sheep and twenty-nine million goats, an unsustainable number that has and will continue to degrade the pastures. By contrast, in 1989, the negdels had fourteen million sheep, about five million goats, and a total of approximately twenty-five million horses, camels, and bovine. The total number of animals for 2019—seventy million—is astonishing and far beyond the carrying capacity of the land. The existing pasture can accommodate about half that number; seventy million is an overpopulation that will contribute to desertification. The market for cashmere led to an increase in goats, but the demand for cashmere could not sustain the great increase in goats. Herders found themselves with an excess of goats.

The National Statistical Office maintains an annual listing of degraded land. It notes that in the fifteen years after the dissolution of the negdels, much land was ruined due to an increase in the size of herds, especially of goats, and the resulting overgrazing. In the years after 2015, the figures have declined somewhat but are still high. In 2019, the figures actually increased to more than 7,000 hectares (17,300 acres) of degraded land. In sum, management of the pasturelands has significantly changed.

Privatization, lack of regulations, and government corruption damaged the herding economy. In an introduction to a translation of a herder's autobiography, the author wrote: "Privatization and the simultaneous decline in state support have heightened the risks faced by herders. Veterinarians have not been as readily available . . . Herders cannot expect the state to help them restock if a bad winter or disease decimates their herds . . . [They also have lost] state support in the forms of digging of wells, provisions of fodder, and trucks for transport, which previously reduced the risks in an exceptionally perilous occupation."⁶

The demanding environment of Mongolia required cooperation among herders who faced devastating winters characterized by substantial amounts of snow and ice. These winter zuds (disastrous winters) resulted in the deaths of hundreds of thousands or millions of animals. Herders had generally banded together to protect the remaining herds and had received government aid. Even during normal times, herders often collaborated to round up the animals and to keep them from harm. An anthropologist who spent considerable time in the countryside wrote that "the government has largely ignored rural areas, trusting that herders would pretty much get along all right without state interference . . . In the absence of an overarching political structure . . . responsibility for herding and for contending with climate has shifted almost entirely to individual herding households."⁷ Herders who did not have sufficient numbers of animals and who could not rely on government aid abandoned the countryside and moved to Ulaanbaatar or other towns.

Some government officials and foreign advisers belatedly recognized the need for cooperation in Mongolia's countryside. Yet hundreds of thousands of herders had already moved. Recognition by government and international organizations of the importance of cooperatives came too late for these migrants.

Index of Economic Freedom: Mongolia

OVERALL SCORE 62.4		WORLD RANK 86	
RULE OF LAW		GOVERNMENT SIZE	
Property Rights	48.1 ▼	Tax Burden	89.9 ▲
Judicial Effectiveness	25.9 ▲	Government Spending	71.5 ▲
Government Integrity	37.4 ▲	Fiscal Health	91.3 ▲
REGULATORY EFFICIENCY		OPEN MARKETS	
Business Freedom	61.9 ▼	Trade Freedom	74.6 ▲
Labor Freedom	74.4 ▼	Investment Freedom	50.0 —
Monetary Freedom	73.4 ▼	Financial Freedom	50.0 ▼

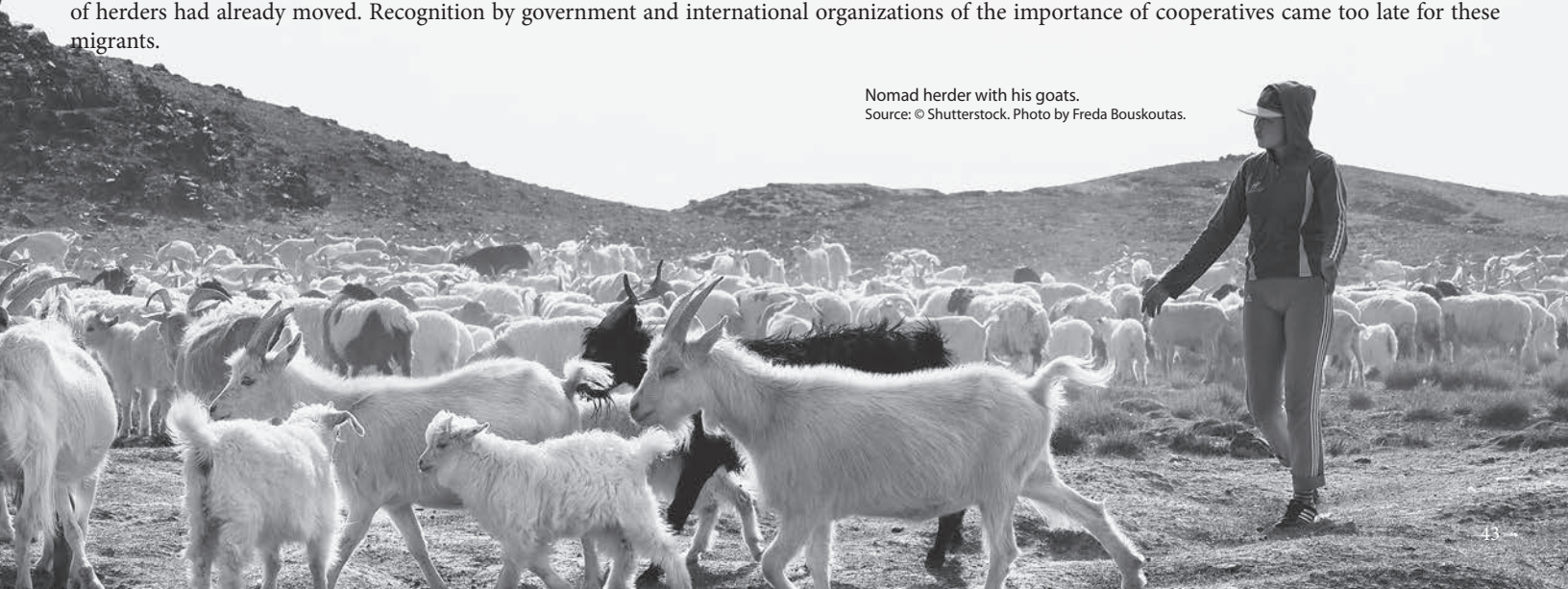
The Index of Economic Freedom, published annually for twenty-seven years by the Heritage Foundation, ranks nations based upon twelve freedoms, including property rights, business freedom, judicial effectiveness, and government integrity.

In 2021, Mongolia's economic freedom score was 62.4, making its economy the 86th freest out of 178 countries and territories in 2021, the first time since 2013 that Mongolia's economy has risen to the moderately free category. *Significantly, greater economic freedom continues to be impeded by a woefully inadequate rule of law. Government corruption is pervasive, and courts are unreliable* (emphasis added).

Student Discussion Question

1. This indice focuses upon economic freedom. Why would government corruption and an unreliable judiciary harm private economic freedom?

Source: Heritage Foundation, "2021 Index of Economic Freedom," accessed April 19, 2021, <https://tinyurl.com/52rwz8ma>.



Nomad herder with his goats.
Source: © Shutterstock. Photo by Freda Bouskoutas.

The government's lack of attention to the rural areas has also impeded the herder economy in other ways. A paucity of roads in the countryside has prompted travelers to drive vehicles through what one anthropologist has described as the "precious steppe,"⁸ still another way to degrade the land. The state built some roads, but it has not initiated a campaign to educate drivers concerning the damage in traversing the land with heavy trucks or jeeps.

It should be noted that several groups have attempted to protect and restore rangeland. The Green Gold Animal Project, with the support of the Swiss Agency for Development, recognized the dangers of overstocking and worldwide climate change, with higher temperatures and lower precipitation, and has brought back degraded land. It has succeeded, in part, because it has resorted to traditional grazing practices by allowing some land to remain fallow. Yet its laudable efforts are not sufficient to deal with the scope of the problem. Another trend has been community-based rangeland management. Herders, often bound by kinship ties, have increasingly collaborated with local officials to determine claims to land and to avoid conflicts over pasture with others, a promising reversion to greater cooperation in the countryside.⁹

Damage to the forests in the north and west has been another threat in the countryside. Forests ought to balance the mostly treeless steppes, and the government, recognizing their value, organized Strictly Protected Areas to save the trees, which preserve the water supply, prevent soil erosion, drain natural gas, and maintain the habitat for wildlife. Yet in the aftermath of the collapse of Communism, the state has devoted few resources to these Strictly Protected Areas. The Ministry of Nature and the Environment has received scant funding to combat pests and insects, tree diseases, and in particular wildfires, which have increased in number and intensity, perhaps due to climate change.¹⁰ Illegal logging has also contributed to the damage. Herders who did not obtain sufficient animals in the inequitable distribution of the *negdels'* assets during the privatization process or whose herds were devastated by *zuds* (disastrous winters) could not eke out a living. They often turned to the lucrative trade of supplying wood to China and Japan. They cut down trees and smuggled logs to their East Asian neighbors. Others had been turned into paupers because of the inequitable privatization and the loss of most of their animals. They used wood for fuel because they could not afford coal. Even in the Gobi Desert, the poor herders ravaged the unique and rare *saksaul* plants or trees and used them for firewood. This also harms the limited soil. These practices and conditions had led to a loss of almost 300,000 hectares (741,316 acres) of forested land in 2010, which then decreased to approximately 220,000 (543,631 acres) in 2017 but then dramatically increased to almost 600,000 hectares (1.48 million acres) in 2019.

Mongolia's Rare and Endangered Species

The Strictly Protected Areas were designed to protect rare and endangered species. Yet many of the animals have not been well-preserved.

Only about thirty Gobi bears have survived. Red deer, which numbered approximately 130,000 a couple of decades ago, have been reduced to 10,000 because they have been poached for their antlers, which allegedly have medicinal qualities. Wild camels and *khulan*, or wild asses, have been killed for their meat and by wolves, and have also been harmed by the declining water supplies in the Gobi. Poachers have ravaged the brown bear, the saiga antelope, and the argali sheep for their meat and for use as medicines. Snow leopards, whose principal habitats are in Mongolia, Central Asia, northern China, and Siberia, are poached for their pelts and bones. Dozens of birds have been placed on the endangered list, and the crane population is the main species at risk.

The government has legalized some reduction of the population of its rare and precious animals, mostly to generate income. Legal hunters prize killing and mounting argali sheep. In 2019, Donald Trump Jr. illegally killed an argali sheep; the Mongolian government retroactively provided him with a license, which allowed him to do so.¹¹ The state dispatches several hundred falcons a year to the royal families of Kuwait and the United Arab Emirates. It also permits fishermen to catch the unique and sizable *taimen* fish for a fee. Private hunting and fishing companies rather than the government often appear to be the recipients of most of the profits.



Gobi bear. Source: Gobi Bear Project website at <http://www.gobibearproject.org/>.



Mongolian red deer. Source: Wikimedia Commons at <https://tinyurl.com/5jk9zhv8>.



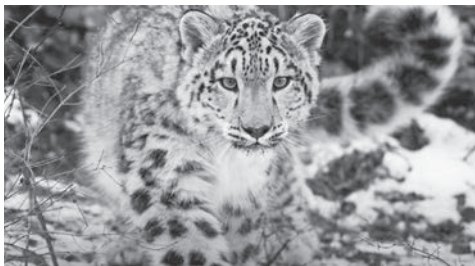
Saiga antelope. Source: Wikimedia Commons at <https://tinyurl.com/jjn55j84>.



Demoiselle cranes. Source: Wikimedia Commons at <https://tinyurl.com/525frw9c>.



Przewalski's wild horses in the steppes in southern Russia. Source: © Shutterstock. Photo by Iceskatingrizzly.



Snow leopard. Source: Screen capture from *10 Incredible Facts About the Snow Leopard* on YouTube at <https://tinyurl.com/bcfxen9s>.



Argali sheep. Source: *Tibet Nature Environmental Conservation Network* website at <https://tinyurl.com/rjtkp6f>.

Many Mongolians were enraged by Toxic Bob's blithe assumption that he would despoil the Gobi Desert's fragile ecosystem.

One major success for rare and endangered species has been the reintroduction of Przewalski's horses, which apparently diverged from other horses before domestication. Another distinction from domesticated horses is that they have thirty-three chromosome pairs instead of thirty-two. Hunters, along with wolves and other predators, nearly wiped out this so-called wild horse by the early twentieth century. Competition with other species for limited water supplies had also devastated these beautiful animals. Before they disappeared in the late nineteenth and early twentieth centuries, naturalists and adventurers had captured some and given them to zoos in Europe. Dutch zoos offered to restock Przewalski's horse after the collapse of Communism in Mongolia. They sent sixteen horses to a Specially Protected Area in Khustain Nuruu, a park about 100 kilometers (62 miles) from Ulaanbaatar. Other European states, especially the Czech Republic, have also released horses in other Specially Protected Areas. Success has been, in large part, due to funds donated by European governments for guards and for guest houses for tourists who contribute to the maintenance of the facilities.

Tourists to the Mongolian countryside have been a mixed blessing. They provide revenue, but occasionally damage the environment. Tourist companies do not always properly dispose of waste, which can often seep into lakes and rivers. Many such tourist companies are not regulated, leading to considerable vulnerability for the land and water in the most scenic locations in the country.

Predatory Mining

The most serious threat to the environment is mining. Mongolia has substantial reserves of minerals and natural resources, including copper, coal, gold, and even uranium. As early as the 1970s, the USSR and Mongolia cooperated to extract copper and molybdenum from a mine in the town of Erdenet. During the Communist period, Mongolian geologists knew about other deposits, and Eastern European and Mongolian specialists confirmed the presence of such resources, especially in the Gobi Desert. In the post-Communist period, a notorious American-Canadian entrepreneur known as "Toxic Bob" (because his mining operations had generated considerable pollution in the Colorado River) learned about copper, gold, and coal deposits in Oyu Tolgoi in the Gobi Desert. Toxic Bob (or Robert Friedland, his real name) obtained leases for exploration. His Ivanhoe Mining Company rapidly sought investments. In a 2005 speech to investors, he bragged about the stability agreement he was negotiating with the Mongol government. He said the tax would amount to 5 or 6 percent and that he would secure a five-year-tax holiday: "And the nice thing about this, there's no people around, the land is flat, there's no tropical jungle, there's no NGOs, we're only seventy kilometers [43.5 miles] from the Chinese border. You've got lots of room for waste dumps . . ." ¹²

Many Mongolians were enraged by Toxic Bob's blithe assumption that he would despoil the Gobi Desert's fragile ecosystem. Demonstrations in Ulaanbaatar compelled him to sell much of his interest in Oyu Tolgoi to Rio Tinto, an Anglo-Australian mining company. But it too has been accused of environmental degradation.

The 2009 agreement and subsequent amendments between Rio Tinto and the Mongolian government for mining have fomented controversy and caused corruption. In 2020, S. Bayartsogt, the finance minister who signed the initial agreement, received a ten-year prison sentence for accepting bribes equivalent to US \$10 million. S. Bayar, the prime minister who also signed the agreement, was arrested in 2018 and is awaiting trial. Both had secret offshore accounts amounting to millions of dollars, money that probably derived from graft. The agreement they negotiated gave Rio Tinto a 66 percent equity stake and the Mongolian government 34 percent. Mongolia borrowed the money for its partial ownership from Rio Tinto at a relatively high rate of interest. Repayment of the debt will, as of this writing, translate into a lack of dividends until 2051.

Mongolia's GDP increased by 17.3 percent in 2011 and 15.7 percent in 2013, but with the GDP based in large part on mining, it shrank to 1.2 percent in 2016. One reason for the decrease was China's environmental policy. Concerned about air pollution, China did not import as much coal by 2016. Another reason was that a general economic slowdown led to less Chinese demand for copper that harmed Mongolia's mining industry, which contributed 83.7 percent of Mongolia's exports in 2019.¹³

Disputes with Rio Tinto also contributed to disarray. Rio Tinto's cost overruns dismayed Mongolian officials because Mongolia was liable



The Ukhaa Khudag (UHG) coal mine, located in Mongolia's south Gobi Desert, is one of the largest open-pit coal mines in the world. UHG is owned and operated by the private Mongolian Mining Corporation (MMC). The majority of coal is used for steel production. Source: Screen capture from the documentary *Mongolia's Mining Boom* (2012) at <https://tinyurl.com/p523eunc>. © Journeyman Pictures.



Oyu Tolgoi is a copper–gold mine in the south Gobi region of Mongolia. It holds one of the largest undeveloped high-grade copper deposits in the world. Source: Screen capture from Oyu Tolgoi presentation on their website at <https://www.ot.mn/about-us/>.

for these additional expenses. The initial cost estimate of US \$5.1 billion for construction of the mines ballooned to US \$7.1 billion and generated conflicts between the two sides. It also remains unclear how many Mongolians profited from these resources.

Mining presents a significant danger to the environment and the herding economy. Herders have complained that waste produced by mining has not been properly disposed of, that trucks bearing the mine's products have kicked up dust that damages the grasslands, and that roads and railroads built for Oyu Tolgoi have eaten away at the limited land in this desert location and posed critical threats to rare and endangered species of animals. Most damaging is the mine's use of the finite water resources in this arid terrain.

Mongolia's water resources have been dissipated by mining as well as other uses. Two hundred sixty-four of 6,161 rivers, 286 of 3,895 lakes, and 704 of 12,591 springs have dried out in a brief time, as of 2019.¹⁴ Gold mining in particular requires considerable water. Due to the decline in water and the pollution of land in mining, some herders have been forced to move from their traditional pastures but have scarcely been compensated for abandoning their pastures, nor have they received much government assistance in relocating their herds to appropriate areas. Herders also face daunting legal impediments in dealing with mining companies. As a specialist on pastoralism has written, "Herders' traditional or 'customary' rights . . . seem powerless to ensure compensation or protection of herders' land rights against formal licensed mining activities."¹⁵

Although Oyu Tolgoi is the largest international company in the country, other foreign enterprises have similarly despoiled the land. Traditional animosity toward the Chinese prompted Mongolians to be critical of China's ownership of mines. Mongolian nationalists, bolstered by articles in the media, have asserted that "Chinese are actively plundering the country's resources and taking everything with them. The very essence and valuable resources of Mongolia are sucked out, and the unusable land left behind . . . The Chinese are suspected and in fact routinely accused of poisoning the environment through harmful extractive practices."¹⁶ Mongolian gold companies have similarly poor environmental records and great influence. In fact, the owner of the Erel gold mining company, a major polluter of the Ongi River, was in 2006 and 2007 Minister of Fuel and Resources, and one of his underlings was Minister of Nature and the Environment. Tsetsgeegiin Mönkhbayar, the environmentally conscious founder of the Ongi River Movement, revealed their conflicts of interest. A parliamentary commission confirmed Erel's damage to the Ongi, but the company "has neither been prosecuted for its environmental misconduct nor been forced to rehabilitate the land and the river."¹⁷

The mining companies and the inequitable divisions of assets after the abolition of the *negdels* left a significant number of herders without animals or employment. Not wishing to move into cities and having few opportunities in the countryside, a few began to pan for gold illegally. Many unemployed herders, as well as workers in Rio Tinto and other companies' open pit mines, believed in spirits, which deplore the damage that mining imposes on the earth. They persisted in mining, despite

Known as ninjas, the former herders worked under dangerous conditions, and newspapers reported on accidents and even deaths.



Ninja gold camp. Screen capture from the 2009 NPR short documentary, *Ninja Miners of Mongolia* on YouTube at <https://tinyurl.com/2ueh922w>.



Winter air pollution in Ulaanbaatar. Source: Screen capture from the short documentary *Better Air Quality in Ulaanbaatar Begins in Ger Areas* on the World Bank website at <https://tinyurl.com/4xskmtkb>.

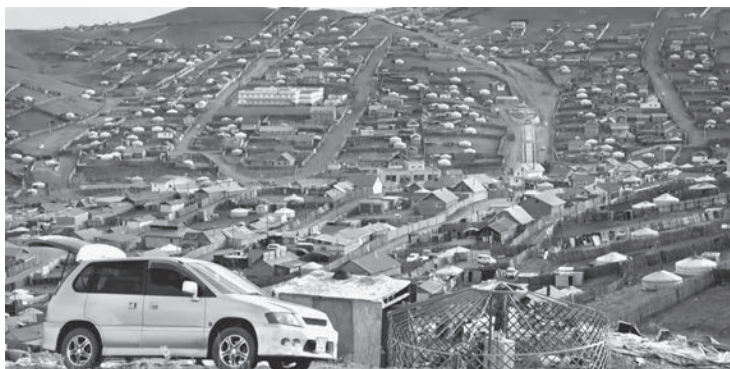
the fear that defying the spirits might result in disasters.¹⁸ Known as ninjas, the former herders worked under dangerous conditions, and newspapers reported on accidents and even deaths.¹⁹ Lacking the restraints of regulations, the ninjas contributed to environmental damage. One anthropologist observed that “with thousands of ninjas panning for gold, rivers were turned into stagnant mud, leaving herders with no drinking water for themselves and their animals. A fertile pastureland was perforated with deep mining holes . . . This reality struck during the winter . . . when herding households ran out of drinking water . . . people were entirely dependent on the intermittent snowfall . . . Men equipped with axes and saws broke loose large chunks of ice that were transported back on horseback.”²⁰

Migration to Ulaanbaatar

Most of the dispossessed herders moved to Ulaanbaatar, where they contributed to a different type of environmental damage. Zuds (disastrous winters), especially in 2009–2010, and the lack of government support during those times was a primary cause of former herders’ migration to the capital. Such zuds have occurred more frequently than in the early to mid-twentieth century and have placed great strains on Ulaanbaatar. The capital had a 1950 population of 62,000 that increased to 575,000 in 1990. Even that figure far exceeded the original plan for the city. By 2020, the population had tripled from its 1990 level, with about 60 percent of the city’s inhabitants composed of former herdsmen living in *gers* (tents) without access to running water and trash pickups. Chaotic privatization, government ineffectiveness and corruption, and inexperienced herders had prompted this migration, which generated severe environmental problems.

Air pollution is the major problem in the capital. Ulaanbaatar is one of the world’s most polluted cities, and, in some surveys, it is ranked first. The capital is surrounded by mountains, and the city’s smoke creates a thermal inversion in winter. Coal-fired power stations, smoke from old cars, burning of brush, and now the coal and wood in heating and cooking in the *gers* have contributed to air pollution. The Air Quality Index reveals an alarmingly high rate of pollution. The scale stretches from zero to 500, but “Ulaanbaatar’s air during winter has high daily averages of 750.”²¹ A researcher in Ulaanbaatar offers a vivid description of conditions: “On a particularly bad day . . . the air outside . . . is thick with smog, and it feels distressingly like being in a house fire. The atmosphere is so saturated with particulates that I cannot see across the street. In these conditions, the effects are immediate: the smoke burns my eyes and lungs, and I contract a heaving cough from being outside for not much more than ten minutes.”²² Such conditions have translated into a remarkable upsurge in pneumonia and other respiratory illnesses, and have already and will, in the future, place substantial burdens on the health care system. In 2015, 435 children under the age of five died of pneumonia in the city. In 2019, the government banned the use of coal in the *gers* and provided, at cost, coal briquettes, which generate less smoke. The extent of such distribution is difficult to gauge, partly due to corruption and mismanagement in the Ministry of the Environment. As one ger resident explained, “The government’s raw coal ban is nothing more than a ‘knee-jerk’ reaction from government representatives who are eager to show that they are doing something about the pollution problem ahead of the 2020 elections.”²³ The government cannot supply the sizable population that inhabits the *gers*, and the ger residents also cannot afford the more fuel-efficient stoves that the state endorses.

The government cannot supply the sizable population that inhabits the *gers* [tents], and the ger residents also cannot afford the more fuel-efficient stoves that the state endorses.



Large ger district in Ulaanbaatar. Source: Screen capture from the short documentary *Mongolian Housing: Many People Choose to Live in Tents* on the Aljazeera website at <https://tinyurl.com/26zfz7x>.

Mongolia offers a salutary warning for other countries. If a country as sizable as Mongolia and with a relatively minuscule population can face such serious environmental crises, how much more damage could afflict a country with a small territory but a large population? Desertification, illegal logging, poaching of rare and endangered species, and predatory and sometimes-illegal mining, abetted by a lack of government regulations and corruption, have harmed the countryside. Migration into and a population explosion in the capital city and its use of coal for heat and cooking in their *gers* have contributed to one of the world’s highest rates of air pollution.

Mongolia's current economy has an impact on its environmental policies. It relies on animals and animal products, mining, and—to a lesser extent—tourism. As noted earlier, mining provides 83.7 percent of the country's exports, which makes Mongolia dependent on a nonrenewable source. During the Communist period, the country had developed manufacturing and produced leather goods, boots, and cashmere products. The import of cheaper Chinese products has resulted in a death knell for most of these industries. Experts from the United Nations, international financial agencies, and Mongolian economists have issued a number of reports suggesting that if Mongolia seeks to lessen its dependence on mining and the potential for the ensuing environmental damage, it will need to diversify its economy and restore its manufacturing base. This could mean temporary reimposition of tariffs, abolished in 1997, to protect these infant Mongolian industries.

It should be noted that many Mongols seek to protect their environment. They have founded environmental organizations, including Oyu Tolgoi Watch. Affiliated with the Coalition for Human Rights in Development, Oyu Tolgoi Watch has collaborated with herders and instructed them regarding international environmental standards and human rights issues. It has publicized violations by Oyu Tolgoi and serves as a model for other less well-known and less well-funded organizations critical of foreign mining companies. The World Wildlife Fund and the Nature Conservancy, together with the United Nations Development Programme, have offices in Ulaanbaatar, and have provided information and lobbied for environmental causes, as have such Mongolian organizations as the Mongolian Nature and Environmental Consortium. Specific individuals (whom a writer has called “Young Mongols”) who are unaffiliated with any organization have also contributed to technology and lobbying. One capable technocrat has invented a heater and boiler that employs the available electricity in the gers and reduces the use of coal²⁴; another environmentalist has organized demonstrations to protest the mining company Rio Tinto's policies and their impact. The environmental movement is still in its infancy but could, with proper support, have an impact. The government will need to take an active role, and some officials recognize that the state cannot depend exclusively on corruption and crony capitalism if it is to preserve the environment. ■

NOTES

1. I am grateful to two anonymous reviewers and to Lucien Ellington for invaluable suggestions that, I believe, improved this article.
2. On climate change, see Ministry of Environment and Green Development, *MARCC-2014: Mongolia Second Assessment Report on Climate Change—2014* (Ulaanbaatar, 2014).
3. Michael Kohn, *Mongolia* (Oakland: Lonely Planet, n.d.), 128.
4. *UB Post*, December 8, 1998.
5. Ole Bruun and Ole Odgaard, eds., *Mongolia in Transition* (Richmond: Curzon Press, 1996), 67.
6. Ts. Namkhainyambuu, *Bounty from the Sheep*, trans. by Mary Rossabi (Cambridge: White Horse Press, 2000), 25.
7. Craig Janes and Oyuntsetseg Chuluundorj, *Making Disasters: Climate Change, Neoliberal Governance, and Livelihood Insecurity on the Mongolian Steppe* (Santa Fe: School for Advanced Research Press, 2015), 57.
8. Ole Bruun, *Precious Steppe* (Lanham: Lexington Books, 2006).
9. Ariell Ahearn, “The Role of Kinship in Negotiating Territorial Rights: Exploring Claims for Winter Pasture Ownership in Mongolia,” *Inner Asia* 18, no. 2 (2016): 245–264.
10. In 2013, there were thirty-four wildfires; in 2015, 184; in 2017, 220; in 2018, 77; and in 2019, 121. The trend is upward. National Statistics Office of Mongolia, *Mongolian Statistical Yearbook, 2019* (Ulaanbaatar, 2020).
11. William Cummings, “Secret Service for Trump Jr.'s Mongolia Trip to Hunt Rare Sheep Cost \$76,000, Watchdog Says,” *USA Today*, June 10, 2020, <https://tinyurl.com/2avy5x6f>.
12. “Nothing Like It on Planet Earth—Robert Friedland's Tour d'Tolgoi,” *Resource Investor*, March 7, 2005.
13. National Statistical Office of Mongolia, *Mongolian Statistical Yearbook, 2019* (Ulaanbaatar, 2020), 618.
14. *Mongolian Statistical Yearbook, 2019*, 283.
15. Caroline Upton, “Mining, Resistance, and Pastoral Livelihoods in Contemporary Mongolia,” in ed. Julian Dierkes, *Change in Democratic Mongolia: Social Relations, Health, Mobile Pastoralism, and Mining* (Leiden: Brill, 2012), 247. In the same volume, Oyuntogos Lkhasuren, “Occupational Safety and the Health of Miners as Challenge to Policymaking in Mongolia?” offers insights.
16. Franck Billé, *Sinophobia: Anxiety, Violence, and the Making of Mongolian Identity* (Honolulu: University of Hawai'i Press, 2015), 22–23.
17. Mette High, *Fear and Fortune: Spirit Worlds and Emerging Economies in the Mongolian Gold Rush* (Ithaca: Cornell University Press, 2017), 56.
18. High, 61, highlights other dangerous practices: digging into the ground, breaking off fresh branches from trees, placing dirty objects in bodies of water, and breaking stones.
19. Oyuntogos Lkhasuren, “Occupational Safety and the Health of Miners as Challenge to Policymaking in Mongolia?” in ed. Dierkes, *Democratic Mongolia*, 135–147.
20. High, 26–27.
21. Saskia Abrahms-Kavunenko, *Enlightenment and the Gasping City* (Ithaca: Cornell University Press, 2019), 8.
22. Abrahms-Kavunenko, 2.
23. Aubrey Menard, *Young Mongols: Forging Democracy in the Wild, Wild East* (Singapore: Penguin Books, 2020), 38.
24. Menard, 30.

Experts from the United Nations, international financial agencies, and Mongolian economists have issued a number of reports suggesting that if Mongolia seeks to lessen its dependence on mining and the potential for the ensuing environmental damage, it will need to diversify its economy and restore its manufacturing base.

MORRIS ROSSABI (PhD, Columbia University) was born in Alexandria, Egypt and teaches Chinese and Mongolian history at the City University of New York and Columbia University. Author of books such as *Khubilai Khan: His Life and Times*, *Modern Mongolia: From Khans to Commissars to Capitalists*, and *A History of China*, as well as numerous book chapters, he has collaborated on catalogs for art exhibitions at the Metropolitan Museum of Art, the Cleveland Museum of Art, and the Los Angeles County Museum of Art. He has traveled extensively and lectured in the Middle East, China, Japan, Korea, Central Asia, and Mongolia. The National Mongolian University awarded him an honorary doctorate in 2009.