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DURHAM, N.H. – As global consumers demand more “green” technologies and advanced products, people living in areas where extraction of substances used to manufacture such products face increasing environmental and humanitarian devastation, according to a new analysis by Stacy VanDeveer, associate professor of political science at the University of New Hampshire.

“For centuries, boom-and-bust cycles for resource commodities have been linked to political and social instability. Unfortunately, it appears unlikely that the raw materials demanded by 21st century economies and technologies will break such cycles – at least not without concentrated attempts by policymakers to curb such patterns,” VanDeveer said.

VanDeveer presents his analysis “Resource Curses: Redux, Ex-Post, or Ad Infinitum?” in the new report “Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation” published by the Woodrow Wilson International Center for Scholars.

In his analysis, VanDeveer discusses three substances that play important roles in the “green technology” revolution: coltan, lithium, and rare earth minerals.

Coltan is commonly used to produce cell phones, laptops, tablets and many other technology products and processes. According to VanDeveer, coltan mining has had a particularly devastating impact in the Democratic Republic of the Congo. Rampant mining under highly dangerous conditions and with ecologically destructive processes has left thousands of giant pits in or near agricultural land, national parks and reserves, and river basins. At the same time, money from the coltan trade has fueled militia violence and arms transfer among warlords.

Lithium is used to produce many types of batteries and could experience potentially huge increase in demand driven by the renewable energy industries. Bolivia is home to about half of the world’s lithium and has experienced many of the political and economic difficulties common to states dependent on extractive industries, according to VanDeveer.

“If lithium demand grows as rapidly over the next decade as some predict, the global market for high-tech products, greener cars, and energy production may well drive a Bolivian lithium boom to fill state coffers and fund patronage networks similar to those already constructed via oil revenues,” he said.
The demand for rare earth minerals has increased because of expansion of the renewable energy, defense, and communications industries. Although rare earth minerals are not “rare,” China has dominated rare earth mining because the country allows low-cost mining operations, which have inflicted significant environmental and human costs.

According to VanDeveer, while mining firms in California and Australia are investing in new mineral processing facilities, many countries with rare earth minerals may not invest in extraction due to the ecological and human costs as well as not being able to compete with China’s rare earth mineral prices.

“We are not likely to stop extracting mineral resources anytime soon. However, it is possible to substantially reduce the environmental externalities and humanitarian side effects of extractive industries. We know this because in parts of the world, like Australia and North America, mines already generally operate under comparatively high standards for environmental and worker-safety protection, showing that all states reliant on mineral or oil extraction are not necessarily ‘cursed,’” VanDeveer said.

“Making progress toward a new global economy that prioritizes environmental sustainability and places a premium on human security will require the ongoing commitment of capable states and the careful regulation of markets and firms,” he said.


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