Blog

Extractives, climate change, and development

by Tony Addison, Alan R. Roe

To read this blog, on a computer screen or mobile phone (or even paper!), a manufacturing process used plastics derived from oil, and metals mined from ores. Many of the materials are non-renewable (oil, gas, metals), some are recycled, and some are from renewable sources (perhaps the paper). The manufacturing, transportation, and marketing that delivered the device for you to read this blog could not have happened without the consumption of energy. Much of that energy is produced by non-renewable means (derived from oil, natural gas and – worst of all - coal), but an increasing share comes from renewable sources (solar, wind, and – controversially - nuclear). Since humanity first emerged, it has been extracting materials and energy from the earth's surface, oceans and atmosphere, with increasingly sophisticated technology in the extraction itself and then in the manufacturing process (the bronze age, the iron age and so forth). The use of materials and energy defines and shapes human civilization.

The era of prosperity, and of climate change

Our modern era is characterized by levels of prosperity for millions that are unprecedented in human history. Millions have moved out of poverty over the last 30 years, notably in Asia, through a process of economic growth. But our era is also defined by accelerating climate change with the accumulation of carbon and other greenhouse gases in the atmosphere from the consumption of fossil fuels. Samples of arctic ice dating from the time of Rome, show a jump in the presence of those gases as civilization first consumed large amounts of carbon-based energy. The pollution of water supplies by metals, noxious and dangerous city air quality, and the build-up of uncycled industrial waste (including poisonous metals such as mercury) also mark our era. Some 90 per cent of electronic waste goes unrecycled, most likely including the electronic device on which you are reading this blog. That material, both in use and dumped, came from the world's natural resources – both renewable and non-renewable.

Keep it in the Ground?

"Keep it in the ground" is one response to this crisis. Yet, many developing countries rely on fossil fuels for foreign exchange earnings, and for their own energy

production. Mozambique has vast reserves of coal, and India is reliant on coal for electricity generation, for example. Climate change adaption and mitigation will have big impacts on the demand for fossil fuels, and therefore the future development prospects of producing countries. They too have a major interest in international action on climate change, for droughts and floods are already intensifying as the climate warms. But at the same time, their development plans and macro-economic scenarios are predicated on the extraction and sale of fossil fuels. They both need to diversify away from economic dependence on fossil fuels to achieve new and better forms of economic growth – that maximize poverty reduction, too – and green their own energy-production systems.

The importance of transformation

The need for hydrocarbon rich countries to transform their economies is imperative for two other reasons. First, the savage downturn in the world prices of hydrocarbons (together with metals) since 2014, after the many years of high prices during the commodity “super-cycle”, has hit exporters like Angola and Nigeria hard. Insufficient diversification of economies during the boom years has left them vulnerable to price volatility and what looks like a future in which hydrocarbon prices are unlikely to return to their high point.

Second, they need to diversify from hydrocarbons because this dependence has too often been associated with poor development performance (so called “Dutch Disease”), and often spectacular development disaster (with political instability and violent conflict in the worst cases). This is another reason “keep it in the ground” has resonance: the discovery of hydrocarbon or mineral wealth can, in the context of weak institutions and poor governance, lead to economic (and political) disaster.

Extractives, sustainability, and development

Yet while “leave it in the ground” is a useful campaigning device – and the world must take more action to accelerate the phasing out of fossil fuels – hydrocarbons will continue to be a substantial part of the global energy mix for quite some time. Moreover, while the recycling of metals into new uses can, and must, continue to grow, new mines will continue to open if the global demand for metals is to be met as countries grow out of poverty. The demand for some metals, notably copper, will rise in the long-term whatever the source of electricity production, as copper remains the most widely used conductor for electricity distribution. As global prosperity rises, as more people become connected online, as more poor children become literate and numerate, and as more electrical power is required, so the need for materials extracted from the earth’s soils, oceans, and atmosphere will continue to grow.

Our challenge is therefore to manage the extractive sectors in ways that help transform the economies of producers for the better and help them end poverty – while doing so in ways that contribute to climate adaption and mitigation, preserve the environment, and respect the rights of communities in mining localities (and ensure they benefit). This is a demanding agenda with many levels of action: local, regional, national, and international. To meet this need, UNU-WIDER's project on the extractive industries and development brings together a wide range of international expertise to share experiences, insights, and recommendations.

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Context

PROJECT

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