It’s a little before 7am on a bright, airless August morning, and already Abdullah Idriss Isaac has been hard at work for hours.

Swishing his aluminum pan back and forth through a waist-deep pool of brackish water, he wearily scrutinizes its contents for glimmers of gold. With the sun beginning to beat down mercilessly, the young miner splashes handfuls of the liquid, which is laced with mercury and cyanide to separate gold from unwanted rock, on his face to stay alert.

All around him is a scene like something out of *Mad Max*. Overseers set truck tires alight to soften ground that’s been baked solid by the fierce Sahara sun. As the flames relent, newly arrived workers—those who haven’t yet earned their stripes—step into the breaches to blast away chunks of the weakened turf with homemade explosives. A series of muffled bangs ring out across the desert encampment. “Look! Watch out!” the miners shout at one another.

Amid the chaos and the pall of rank chemical fumes, Isaac uncomplainingly sticks to his duties as a gold “cleaner.” Since fleeing his home city of Nyala in western Sudan’s war-torn Darfur region, he’s scrimped furiously to try to repay the cost of his tools and turn a profit. Now, with this dusty hillock in the sparsely populated hinterland to the south of the Egyptian border beginning to show promise, he says no manner of horrible conditions will dash his dreams of striking it rich.

“There’s no work elsewhere, so what choice do I have anyway?” he asks, unhappily eyeing up the curious crowd that had begun to assemble around us. “It’s this or nothing.”

The government in Khartoum faces a similar dilemma.

After growing at roughly 8% a year throughout the 2000s, Sudan’s economy now lies in tatters, after South Sudan’s secession in 2011 deprived it of 75% of the previously unified country’s oil reserves. There are conflicts in seven of its 18 states. With an El Niño this winter portending drought, officials have realized the urgency of boosting the economy, and have subsequently gone all-in on an industry that had stuttered along in the shadows for decades.

Some 200 mostly local firms have taken advantage of new legislation that’s opened up swathes of the country to prospectors, establishing operations across eight states, according to the Ministry of Minerals. Looking to woo international investors and mining giants, press releases tout Sudan’s ambition to become the third largest gold producer on the continent—behind South Africa and Ghana—by the end of 2015. The country produced 4 tonnes (4.4 tons) of gold in 2009, 36 tonnes in 2014, and is expected to dig up 74 tonnes this year, according to official figures.

So far, however, only a few foreign businesses have risked serious exposure in Sudan, and after a few weeks in a state that’s still deemed a pariah by much of the international community, it isn’t hard to fathom why.

US sanctions, imposed during the 1990s when Khartoum harbored Osama bin Laden, have made it tricky for interested firms to secure the enormous sums necessary to launch into large-scale mine construction. “Lots of European banks are under pressure to have nothing to do with Sudan,” said Hugh Stuart, CEO of Orca Gold, a Canadian company that’s one of the few to have taken the plunge. “It does take us a while to work out how best to transfer money there.” Orca is currently looking to the Arabian Gulf for the $200-300 million required to bore a proper mine on its land to the north of Abu Hamed.

Analysts also suggest some foreign firms might be wary of extensive dealings with the Sudanese government, which insists that all gold be sold through its central bank, and whose president, Omar al-Bashir, is wanted for war crimes by the International Criminal Court.

“The perception… is of a high-risk environment. This stems largely from uncertainty over security of tenure,” said Chris Hinde, Director of the Metals and Mining Report at London-based SNL Metals and Mining. Orca Gold says it’s enjoyed a hassle-free relationship with Khartoum so far.

The biggest obstacle to foreign investment, though, appears to be foreign firms’ desire to avoid bad PR from ties with local mining companies and their Wild West practices.  
So lax is the enforcement of environmental regulations that many small companies dump their mining waste, including the mercury and cyanide remnants, along the Nile. Come the August flood, the waters rise and wash riverside debris towards the Mediterranean. “We fear it will seep into the water table. We fear for the river,” said Salah Abdel Rahman, a conservationist and Nubian rights activist in Abri, in the midst of the gold fields.

Abdel Rahman and his peers also say that the possibility of quick riches is luring young local men from the fields, thereby draining local agricultural labor, and changing the character of the villages. In the absence of any real health and safety laws, and with no medical assistance for miles around, many of these workers are saddled with a range of ailments. Cancer rates have skyrocketed, according to local activists, who point to mercury smoke and accidental cyanide ingestion.

“We are all careful,” Isaac insisted, immersing himself once more in a chemical-ridden gold pool for the rest of his 12-14 hour shift.

For the time being, therefore, it’s the likes of El-Etimad, a small Sudanese company, on whom the government’s hopes of economic revival rest. And here, in the outermost periphery of Sudan’s Northern State, an area half the size of Texas, the company’s chances of successfully matching lofty expectations appear decidedly mixed.

“Nothing is being done systematically and so a lot of ore is being wasted,” said Ayman Ibrahim, as we toured his employer’s facility in the vast arid expanse to the north of Dongola.

“Mind your head. We don’t have first aid here,” giggled Salahadin Salah, the site manager, as he gestured towards the mine’s broad array of deadly machinery.As a relatively new entrant into the field, Etimad might be forgiven some early missteps. Local infrastructure is still meager, and Salah says most artisanal miners—like Abdullah Idriss Isaac and the thousands of others who toil at nearby Sowerda—are so beholden to traditional techniques that it can be hard to integrate them into a more mechanized setup.

But to many of the young eager professionals who’ve flocked to the north straight out of mining college, those in charge seem woefully ill equipped to maximize the industry’s potential.  
Salah, by his own admission, only recently ditched a poorly paid civil-engineering job in order to partake in the spoils. “It’s the money, Mr. Peter, the money.” The company’s owner, an eye surgeon in the capital, is actively involved but is said to have next to no understanding of the vagaries of mineral extraction. Only now, Ibrahim says, are most universities teaching the “correct geology” that will enable greater numbers to pick up on the reddish rock patterns which signal the proximity of gold.

Most maddening of all, as far Ibrahim is concerned, is that samples of rock must currently be dispatched 900 km (560 miles) south to Khartoum for testing, because their Chinese suppliers haven’t yet made good on a promise to deliver gold analysis instruments to the site. “That slows everything down,” he said, with a shake of the head. “There really are very many problems.”

But despite these teething troubles, there is still some evidence to suggest that Etimad and other domestic firms might yet have it in them to spearhead a boom.

Salahadin Salah, for one, points to the company’s recently installed heavy duty crushing equipment—shipped in from Guangzhou, and capable of reducing 300 tons of excavated rock to rubble a day—as evidence of their ambition. Swiftly peeling off plastic factory wraps, he can scarcely contain his glee as he shows off the neat rows of shiny shaking tables through which the miners can begin to separate gold from the tailings. “They’re beautiful, eh?” he said.

The relative safety of the region is also a draw, compared to mounting instability in other parts of the country. Thousands of Darfuris like Isaac have fled to the Nile valley, bringing with them skills and know-how honed in the mines of the Jebel Marra. From the troubled South Kordofan and Blue Nile states has come a ready supply of prospecting scouts.

Managers at Etimad’s site were unwilling to divulge how this helped them, but reached by phone, an employee at one of Etimad’s rivals says most businesses give free rein to small bands of artisanal miners to explore their turf, before summarily beating them off as soon as they find anything.  
“The country’s just been overlooked,” says Neil Passmore, CEO of Hannam & Partners, a corporate finance advisory firm with interests in Sudan. “It’s on the USA sanctions list, and so a lot of investors can’t travel there, but the main evidence for me is the scale of the artisanal mining that’s going on. No exaggeration, it’s like nowhere else in the world.”

*This article was made possible by support from the Pulitzer Center for Crisis Reporting.*