

## **Beyond the Ore: Indonesia's Downstream Bet**

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For most of its modern history, Indonesia has done one thing with its natural wealth: dig it up, cut it down, or pump it out, and sell it raw. Dutch plantations shipped out rubber and sugar and let others turn them into tyres and refined sugar. After independence, the pattern barely changed. Tin, timber, crude palm oil and, later, nickel ore left the country in its roughest form, and the real money — the refining, the manufacturing, the branding — was made somewhere else, usually in China, Japan or Europe. Indonesia kept the hole in the ground. Other countries kept the profit.

In 2014, that began to change. The government banned the export of raw, unprocessed nickel ore. Companies that wanted to sell Indonesian nickel abroad now had to process it at home first — smelt it, refine it, turn it into something closer to a finished product. The logic was simple and, frankly, overdue: if the world wants Indonesia's nickel for electric-vehicle batteries, let Indonesia capture some of the value of that transformation, not just the price of the raw rock. This policy earned a name, *hilirisasi* — downstreaming — and it has become the signature economic idea of the past decade, first under President Joko Widodo and now carried forward, and expanded, by President Prabowo Subianto.

It has since spread well beyond nickel. Bauxite, copper and tin have all faced similar export restrictions, pushing companies to build refineries and smelters at home instead of shipping raw ore abroad. On the agricultural side, crude palm oil is being pushed toward cooking oil, biodiesel and industrial chemicals rather than sold raw. The results, however, have not been uniform. Nickel is the clear success story: exports of nickel-related products rose roughly tenfold in a decade, from about USD 3 billion to over USD 30 billion, and the share of a nickel shipment's value that stays in Indonesia climbed from around ten per cent to nearly seventy. Bauxite and copper have moved more slowly, held back by delayed smelter construction and by foreign buyers unhappy about losing a familiar supply of ore. Palm oil, which touches millions of smallholder farmers rather than a handful of mining companies, has grown steadily but has not produced anything as dramatic as the nickel story. One lesson from this uneven record is worth remembering: what worked spectacularly with nickel will not automatically repeat itself everywhere the same medicine is applied.

Still, is downstreaming enough, on its own, to deliver Indonesia's grand ambition of becoming a wealthy, developed nation by 2045 — the vision known as Indonesia Emas, or Golden Indonesia? Three plain facts suggest caution.

First, the headline numbers can flatter to deceive. When a tonne of nickel ore worth perhaps thirty dollars is turned into battery-grade material worth several hundred, the statistics record a huge jump in value added inside Indonesia. But if the smelter is foreign-owned, its machinery imported and its profits sent abroad, much of that gain simply passes through the country rather than staying in it. What actually stays behind — wages paid to Indonesian workers, taxes paid to the Indonesian state, profits earned by Indonesian firms — is a smaller, harder number, and it is the only one that really tells us whether the country is getting richer.

Second, Indonesia has built plenty of factories but not nearly enough know-how. Billions of dollars have gone into smelters and processing plants, and that is real progress. But the country still spends less than three-tenths of one per cent of its economic output on research and development, a tiny fraction of what countries like South Korea spend. Korea did not just build steel mills and shipyards; it forced foreign investors to train local engineers, share technology and build local suppliers, so that Korean firms eventually learned to design and improve the technology themselves. Indonesia has built the factories. It has not yet built the capacity to run them without depending on foreign expertise indefinitely — and a factory you cannot improve or replace is a rented asset, not an owned one.

Third, the numbers simply do not add up yet. Reaching high-income status by 2045 requires the economy to grow by six to seven per cent a year. It has averaged closer to five per cent over the past decade. Downstreaming's honest contribution to closing that gap is perhaps half a percentage point to one — welcome, but nowhere near enough. The rest has to come from somewhere else: better schools, a tax system that actually collects enough revenue (Indonesia's tax take, at ten to twelve per cent of GDP, is among the lowest in the G20), and a workforce with the skills to do more than operate someone else's machines.

There is a further complication worth noting. Indonesian nickel is processed mainly using electricity from coal-fired power plants, which means metal destined for “clean” electric vehicles carries a surprisingly dirty carbon footprint. As buyers in Europe and elsewhere start charging tariffs based on how much carbon goes into making a product, this could become a real problem for Indonesian exports, not just an environmental embarrassment.

None of this is an argument for giving up on downstreaming. The strategic case for holding a strong position in critical mineral supply chains, while the world scrambles to secure them, is sound, and Indonesia would be foolish to step back now. But the past decade's lesson is that downstreaming is a tool, not a destination. It has proven it can shift where value is captured. It has not yet proven it can build the deeper things — schools, skilled workers, functioning institutions, clean power — that turn a resource windfall into a genuinely developed economy.

A rich endowment of minerals and crops is an opportunity. It is not, by itself, an achievement. Indonesia has used its natural wealth to win a real and hard-fought place in some of the world's most contested supply chains. Whether that becomes the foundation of a broadly shared prosperity, or simply a more sophisticated version of selling raw material cheap, will not be decided in the smelters of Sulawesi. It will be decided in the classroom, the tax office and the power plant — and the work of building those foundations needs to start now, not in 2035, and not in 2045.

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