

There's treasure in waste

WASTE of all kinds is a major problem for the world. Everything from food waste to electronic waste, among many other types, poses a serious threat to the environment, through pollution, as well as worsening the climate crisis when landfills emit global warming methane.

Take the waste from the palm oil industry. Malaysia is the second largest producer of palm oil in the world, with annual production hovering at around 20 million tonnes. The resulting waste accounts for the largest share of the country's agricultural waste.

The empty fruit bunches left after palm fruits are stripped from the fresh fruit bunches create the largest waste biomass.

Improper disposal of such a biomass is a threat to the environment. If it's left to rot on plantations, it will emit methane, a greenhouse gas that is more than 20 times more aggressive than carbon dioxide in warming the planet. At the same time though, rotting empty fruit bunches also release much-needed nutrients.

Since fertiliser is a major cost in oil palm cultivation, most plantations opt to use the empty bunches for this to reduce their reliance on imported, expensive fertilisers. Such a practice, however, comes at the expense of the planet.

Many studies have shown that there are better ways to deal with



Useful: Empty oil palm fruit bunches at a plantation. — Filepic

the empty bunches and even profit from them. There are many potential high value products that can be extracted.

They can feed the renewable energy market that is now growing, including providing high value aviation and bunker fuels (bunker fuel is any fuel type stored in a ship's bunker).

With new regulations in place, there is no doubt that renewable fuel is one treasure waiting to be extracted from the humble empty fruit bunches.

Other potentially high value extracts include graphite for the battery industry, superior and strong nano cellulose which can replace steel, and composites that can command high prices and demand in the aerospace busi-

ness. The latest use for empty fruit bunches that has become commercially viable is to feed the rich leftover cake to black soldier fly larvae, a new source of protein that has the potential to mitigate growing global food concerns.

A major stumbling block to unlocking such treasures is the cost of logistics. Volume is key to making smart waste intelligence viable. Under the 12th Malaysia Plan (2021-2025), biomass has been identified as a potentially valuable sector. But experts believe it won't take off without an enabling ecosystem.

With regulations and incentives put in place to get private investment on board, biomass waste could certainly become an

asset for the country.

Empty oil palm fruit bunches are by no means the only waste stream which offers such hidden treasure. Food waste, another environmental time bomb, also has potential. We are running out of land to accommodate the growing need for landfills. There are better ways to manage and benefit from such food wastes.

Then there is electronic or ewaste. Consequent to the explosion in world demand for electronic gadgets, ewaste is an environmental concern.

There are high value metals to be extracted using smart waste intelligence, instead of allowing them to leach into a landfill and pollute groundwater.

It may be time for the government to fund a comprehensive study on the economic potential of the many types of waste generated in Malaysia.

A strategic blueprint will be the way forward in building the potentially lucrative waste sector.

There is as yet no proper policy to drive such an industry and add value as the country strives to achieve low and net zero carbon emissions.

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SUMMARIES

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