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Attendees at the P2 Waste Summit listening to expert opinions on waste separation and embracing technology to transform waste into profit.

Tech-forward waste transformation

Environment experts revisit importance of recycling and using technology to turn rubbish into profit

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HOW much refuse do we Malaysians produce every day? Whatever the amount may be, environment experts want us to be mindful of the impact we are creating in our surroundings. We need to think if we can refrain from generating unnecessary waste which goes into landfills that are already bursting at the seams.

While many people think recycling campaigns were unheard of in the 1990s, it in fact started thousands of years ago and gained momentum around the world since the 1970s until today.

Environmental activists urge the public to ponder over what we consume, besides carrying out waste separation properly and embracing technology to transform waste into wealth.

In general, Malaysians have come under heavy criticism for not separating our waste and allowing it to turn into compressed rubbish that cannot be recycled.

These points were highlighted at a Waste Summit in Petaling Jaya Damed, Frosser Technology as an innovative tool to Transform Waste to Wealth.

The forum also stressed the importance of responsible consumption and production.



Prof Sumardi, Director of the Institute of Ocean and Earth Sciences (IOES) at Universiti Malaysia Sabah.

Universiti Malaysia Sabah's IOES director Prof Sumardi Yusoff said responsible consumption and production were among the United Nations' most important Sustainable Development Goals (SDG) for environmental protection.

"Everything you create, buy and use contributes goes back to the environment.

"Now, we must practise reduce, reuse, repurpose, recycle and rot.

"We have the option to refuse items that are not sustainable for the environment. And the producers of these items also have a role to play," said Prof Sumardi, pointing out that 90% of

Malaysia's waste went into the landfills.

She noted that the country had 171 landfills but only 18 were sanitary landfills, therefore stressing that waste separation at the source was a must.

However, she said, the present waste concessionaire business model did not support this.

"As long as the concessionaire's business model does not change, they will be less inclined to separate the waste.

"Currently, they are paid by the weight of rubbish disposed of at the landfill, so the more trash they collect, the more they get paid.

"I do not see how this will encourage them to be actively involved in recycling," said Prof Sumardi.

She encouraged Malaysians to adopt behavioural changes such as refraining from preparing too much food, reducing food intake and choosing away less food.

UN Food and Agriculture Organization (FAO) estimates that 1.3 billion tonnes of food is wasted globally every year, and Malaysia are guilty of this too.

Prof Sumardi said 24-hour restaurants were partly responsible for people's overeating habits, which resulted in poor health and added waste contribution.

She said Malaysian food waste was conventionally wet due to the fact that we mostly consumed curry and gravy-based food.

"Food waste ends up in a landfill that leads to the greenhouse effect linked to climate change," she explained.

She also pointed out that leachate in unsanitary landfills flowed into the ground and ultimately led to water contamination.

As for commingled waste, she



said it had no value because different types of waste lumped together could not be recycled.

"The best is to compost your food waste and separate your other dry waste," she added.

Tech frontiers

Prof Sumardi shared the four technology-forward frontiers that could be applied to transform waste into wealth.

They are nutrient recovery from biological treatment, energy recovery from thermal treatment, material recovery through recycling and energy recovery from landfills (refer to chart).

The biological methods consist of anaerobic digestion where the waste can be converted to fertilizer and energy.

Vermiculture using worms, on the other hand, turns waste into vermicompost.

As for thermal treatment, it consists of the incineration process, pyrolysis process that turns waste into gas, oil and bio-oil, and the gasification process that converts waste into electricity, steam and diesel fuel.

Environmental waste management specialist Dr Theng

Lee Cheng advised that waste could be seen as either a source of revenue or expenditure.

"Waste has both environmental damages and degradation cost attached to it.

"Plastics, metal, industrial waste, green waste and paper may have benefits in

