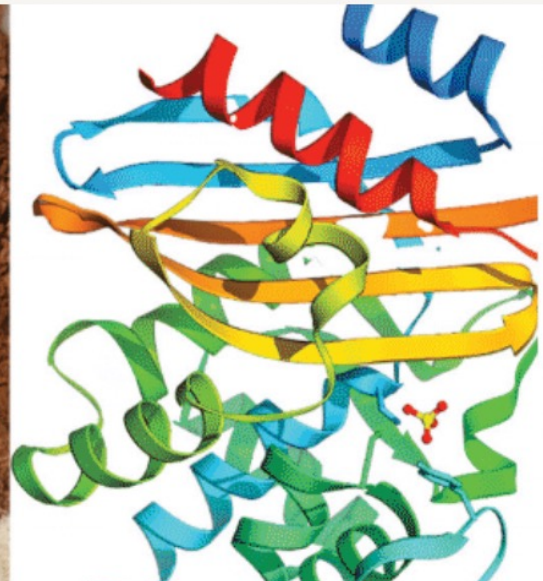


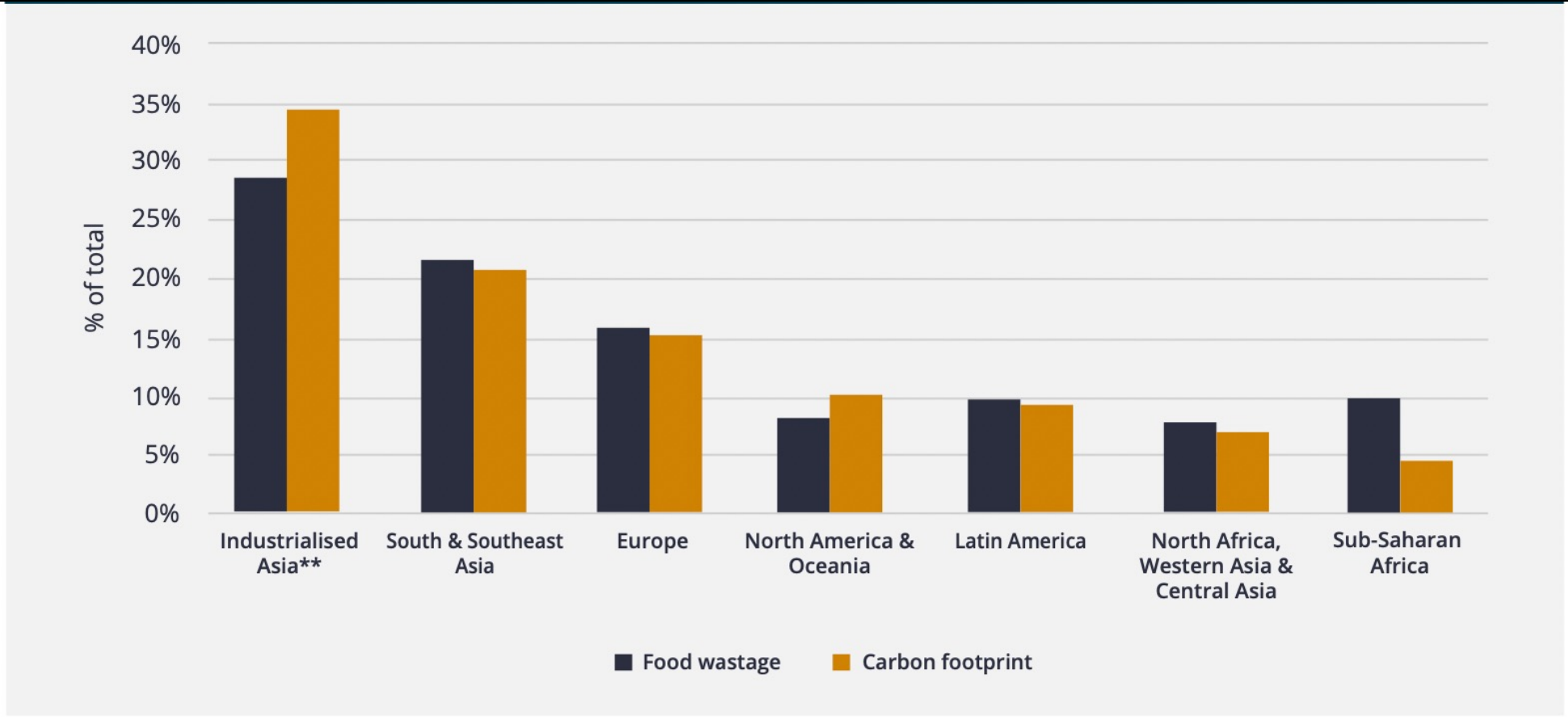


AGRIFOOD UPCYCLING OPPORTUNITIES IN ASIA PACIFIC





CONTRIBUTION OF EACH REGION TO FOOD WASTAGE AND CARBON FOOTPRINT*



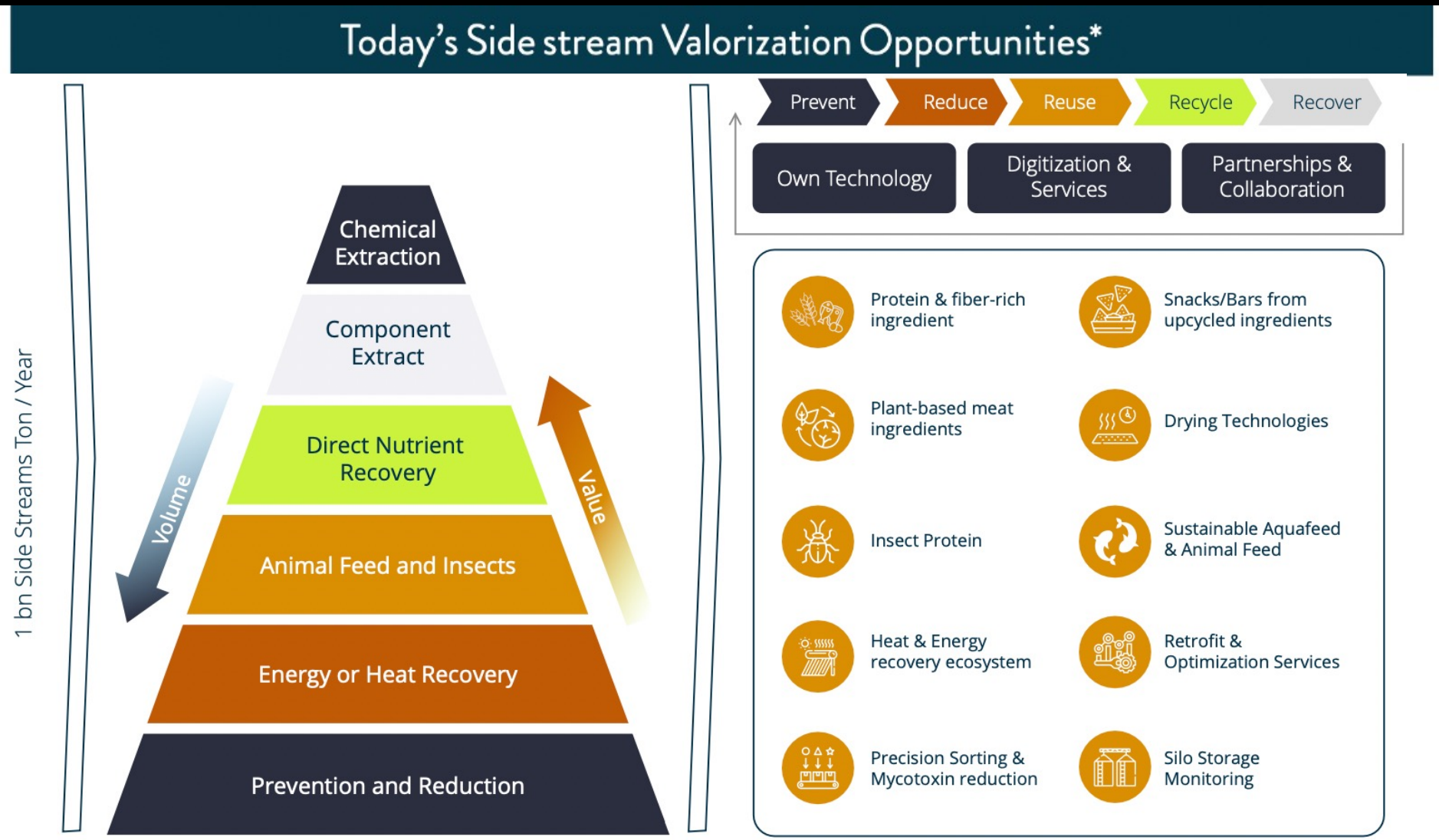
*Source: FAO, Food Wastage Footprint, Summary report

** Republic of Korea, China and Japan

NEW DAWN FOR UPCYCLING

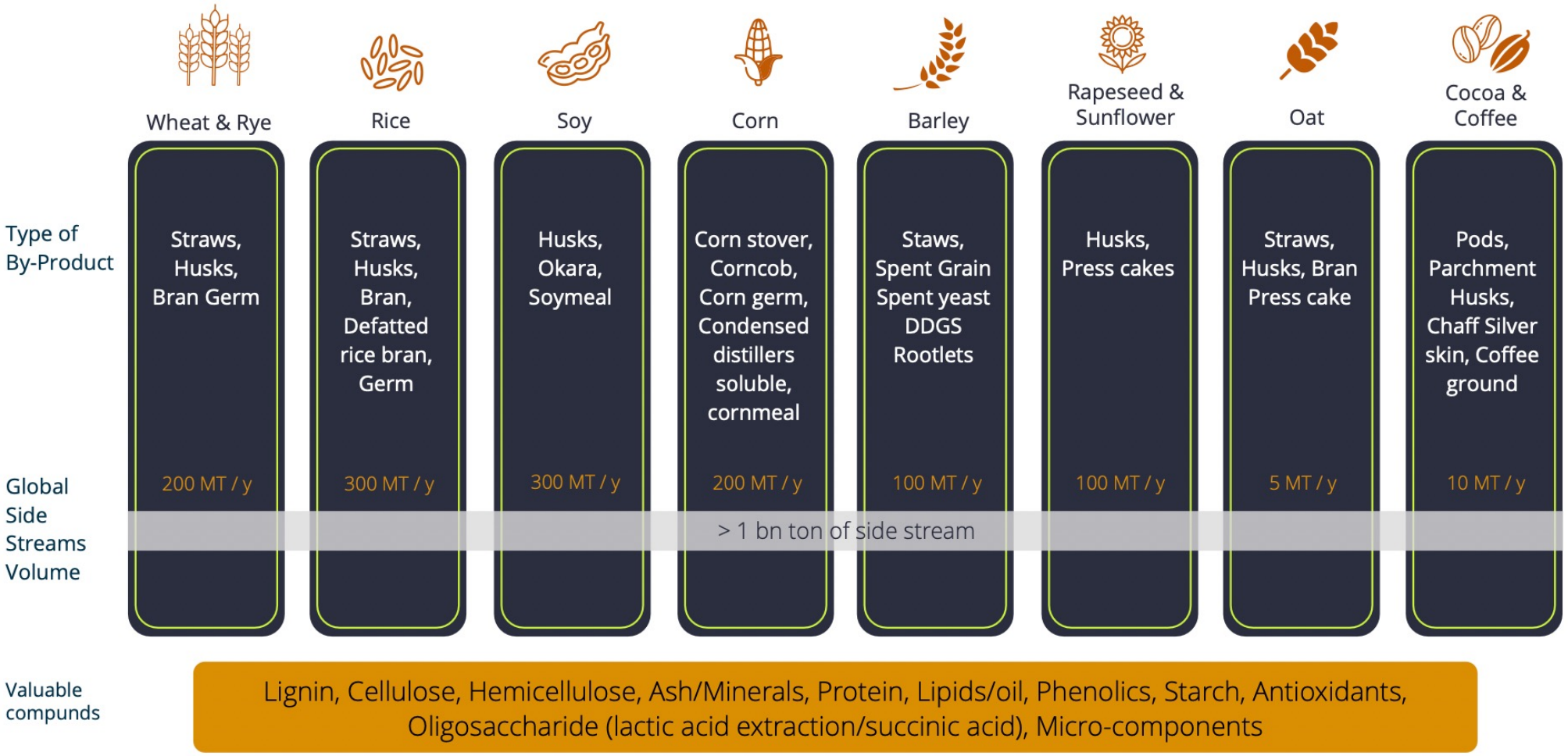
Upcycling banana stems into fabric for sustainable alternative fashion products

ESTABLISHING THE HEIRARCHY OF AGRIWASTE



*Source: BUHLER waste to value white paper

SIDE STREAMS REPRESENTING NEW BUSINESS OPPORTUNITIES



*Source: BUHLER waste to value white paper

WHO ARE THE ENABLING INVESTORS?

International Organisations and Lenders

- Global Food Loss and Waste Finance Facility
- World Bank (International Bank for Reconstruction and Development, IBRD, Aaa/AAA)

Venture Capital in Food Waste Innovation

- DOLE Sunshine Fund For All
- 3R fund launched by the National Environment Agency (NEA), Singapore

Food Waste Credits

- The Food Loss and Waste Accounting and Reporting Standard
- Environmental regulators

KEY TAKEAWAYS

- Asia's food waste is both excessive and undervalued.
- Industrialised Asian economies like Japan, Singapore or South Korea offer strong testing beds for experimental upcycling pilot schemes with emphasis on high tech automation.
- Emerging Asian economies with a greater agrarian focus like Indonesia or the Philippines offer opportunities for waste-to-energy biofuel systems, textile manufacturing from Agri residues, and functional ingredients from perishable fruits.
- AI and computer vision is assisting in the development of a new type of livestock husbandry: that of insects. With selective breeding, these insects are capable of not only breaking down huge amounts of food waste while growing with great resource efficiency but themselves becoming useful in pharmaceutical applications, fertiliser, and even bioplastics.
- We see major investment opportunities at the agri-industrial level of food waste, as it is here that waste can be collected, stored, and processed with greater ease and scale.
- New fermentation technologies and hydrolysis are of particular interest for agrifood waste valorisation.

WASTE-TO-VALUE: A WHITE PAPER ON THE FUTURE OF FOOD UPCYCLING IN ASIA

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