The development of obesity, diabetes and cardiovascular diseases is closely linked to the type of foods people eat, which in turn is influenced by a variety of factors, such as availability of healthy options, understanding of nutrition, and personal preferences shaped by culture and ethnicity. To reduce the incidence and impact of such lifestyle-related diseases, there is a need to develop innovative foods that provide healthier alternatives which are suited to people’s taste buds.
This month, Wilmar International Limited and the National University of Singapore (NUS) launched the S$110 million WIL@NUS Corporate Laboratory to deepen knowledge and deliver new solutions in food technology and sustainable biochemicals. This partnership is an important validation of the quality and potential benefit of NUS’ research strengths and capabilities in Biomedical Sciences and Translational Medicine, Ageing, and Integrative Sustainability Solutions.

**FOOD AS THE NEW MEDICINE**

The 2,000-square-metre joint research laboratory comprises two key clusters. The first aims to address major public health issues through the development of healthier foods. The researchers in this cluster come from the Singapore Centre for Nutritional Sciences, Metabolic Diseases, and Human Development, a joint research centre set up by the NUS Yong Loo Lin School of Medicine and the Singapore Institute for Clinical Sciences under A*STAR.

The researchers will study how different combinations of food can alter absorption and metabolism in Asians, and ultimately prevent diseases or promote health and well-being. For example, they will formulate healthier cooking oils that could reduce cholesterol levels in the elderly. In addition, they will develop food products, such as such as ready-to-eat meals and beverages, that could control weight gain, and blood glucose and lipid levels.
GREEN TECHNOLOGIES FOR THE BIO-ECONOMY

Researchers in the other cluster of the Corporate Lab will capitalise on recent advances in the field of synthetic biology to engineer microbes and enzymes - to function as ‘bio-factories’ - to produce biochemicals from natural sources in a more sustainable and cost-effective way. These biochemicals can then be used in industries such as food and nutrition, flavours and fragrances, as well as therapeutics.

This cluster will leverage on the technology and resources developed by the NUS Synthetic Biology for Clinical and Technological Innovation (SynCTI) research programme. For example, the Bio-Foundry at SynCTI, with its state-of-the-art robotic systems, allows WIL@NUS to seamlessly automate key operations in the design, building and testing of superior engineered microbes and enzymes. SynCTI’s close partnerships with NUS School of Medicine and NUHS also provides a streamlined platform that facilitates clinical and safety assessments of the final food products.

NURTURING TALENT

Over the next five years, the WIL@NUS Corporate Laboratory aims to train more than 60 researchers and PhD students, who will play a critical role in supporting the growth of the food and nutrition, as well as synthetic biology-related industries in Singapore and Asia.