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31 DEC, 2022

Online tech to increase bird nest productivity

Daily Express (KK), Malaysia

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KUALA LUMPUR: NanoMalaysia Berhad (NMB), Malaysia's leading agency in nanotechnology and advanced solutions commercialisation, has developed and deployed a Smart Swiftlet Solution with improved productivity in mind. This wireless device enables remote monitoring of swiftlet birdhouses from afar using the Internet of Nano-Things (IoNT). With the Smart Swiftlet Solution, birdhouse operators and owners can continuously monitor their birdhouses at remote locations using a web browser and mobile application without being physically there.

NanoMalaysia Berhad Chief Executive Officer, Dr Rezal Khairi Ahmad said: "The Swiftlet Farming project is a convergence of technologies and sectoral interests under REVOLUTIoNT, an initiative under the National 4IR Policy. Our Internet of Nano-Things solution powered by solar energy provides precise monitoring and identification of the right conditions for increased bird's nest productivity by at least 1.5 times."

He added, "The intersection of the digital economy, food and agriculture, renewable energy and healthcare is a classic example of NanoMalaysia's multiple touch points across value and supply chains to create new business and job opportunities which align with our Sustainable Development Goals (SDGs) while scaling up Malaysian small to medium enterprises (SMEs). It is future by design via our unique venture builder investment model, setting us apart from others."

Southern Asia swiftlets are small insectivorous birds found throughout Southeast Asia and the South Pacific. The saliva produced by a pair of sublingual glands located beneath the tongue of the swiftlet acts as the nest cement and becomes a

dried glutinous secretion known as the Edible Bird's Nest (EBN). Also known as 'Yan Wo', this highly valued delicacy among the Chinese community is usually consumed for its nutritional benefits. It is said to boost immune systems, increase energy levels, and improve skin complexion and general longevity. Derivatives of EBN have made its way into the health diet of other ethnic groups in the country.

Typically, birdhouse conditions are monitored to ensure parameters such as temperature, humidity, light density, and gas levels are at an optimal environmental conditions.

These conditions are conventionally monitored by visiting the premises physically, which might inevitably scare the swiftlets away, resulting in lowered productivity and losses. Certain birdhouses are also located at remote locations with a lack of power, making continuous monitoring difficult since sensors require a constant power supply.

Implementing the Smart Swiftlet Solution, which consists of the Wireless Sensor Network System and Energy Harvester Device, will help eliminate the two key pain points for swiftlet operators, namely physical surveillance and dependence on power grids. Real-time monitoring is now a possibility where operators can react to any issues quickly to ensure consistent and high-quality production of EBN, which ultimately leads to increased revenues. The system will also allow them to build in remote locations away from residential and urban areas, which will help reduce the levels of noise pollution. The increased production capacity and quality of EBN will facilitate a higher export to foreign countries and create further job opportunities for Malaysians, which is in line with the National Science, Technology and Innovation Policy (NSTIP) 2021-2030 to create a sustainable STIE and encouraging locals to become technology developers with solid STEM backgrounds.

The demand for EBN has been increasing yearly with strong demand from China. This sector is estimated to be worth nearly US$5 billion per annum in the Asia Pacific region and is expected to reach US$10.14 billion in 2025. In terms of export, Malaysia currently supplies only 20 per cent of the world's demand at an estimated RM1.43 billion in 2020. It is forecasted to reach RM2.945 billion in 2025, trailing behind Indonesia, which supplies about 70 per cent of the world's EBN.

Local industry operators have been actively constructing birdhouses with artificial habitats and suitable environmental conditions to attract swiftlets to build their nests to meet the growing demands. In 2020, there was an estimated 25,000 swiftlet farming premises in Malaysia. It is forecasted to increase to 76,320 by 2025 and is expected to help the country achieve its goal of increasing the Gross Domestic Product (GDP) to RM3.4 trillion by 2030. –Bernama

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SUMMARIES

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