# Japan's aging population sparks innovation in farming technology



Japan is facing a significant demographic challenge as its population grows increasingly older, making it the nation with the oldest demographic in the world. Currently, one-third of the population is aged over 65, with one in ten citizens exceeding the age of 80. This trend is primarily attributed to low fertility rates coupled with a high life expectancy. The consequences of this demographic shift are particularly evident in the working-age populace, with projections suggesting a decrease of 30 million people in the 15-64 age bracket between 2020 and 2070.

The decline in the working-age population has severely impacted various sectors, most notably agriculture. According to Japan’s Ministry of Agriculture, Forestry and Fisheries, the number of individuals primarily engaged in farming has halved since 2000, with those under the age of 60 comprising only about 20% of the agricultural workforce.

In response to the mounting labour shortage, Japan is exploring innovative solutions, including a combination of relaxed immigration policies and advancements in automation technology. Robotics is emerging as a critical element in addressing these workforce challenges.

Tamir Blum, who founded Kisui Tech during his student years in 2021, is at the forefront of this initiative. His company is developing an AI-assisted farming robot named Adam, leveraging technology inspired by space exploration. “In the past 20 years or so, 50% of the farmers have retired, meaning that there’s more and more burden on fewer and fewer farmers to keep producing a stable food supply,” Blum stated in his comments to CNN.

The semi-autonomous robot Adam is designed to navigate challenging terrains while performing various agricultural tasks, such as carrying harvested produce, cutting grass, and spraying fields with pesticides. Blum's involvement with lunar rovers during his PhD research significantly influenced the robot’s design, which he believed could effectively address the challenges faced by farmers in Japan's picturesque but rugged countryside.

Collaborating with the Agriculture Department at Chiba University, Kisui Tech is developing two models of Adam—one full-size and a mini version—testing them in real-world farming scenarios across Japan. The larger iteration of Adam stands at 70 centimetres and 188 centimetres in length, primarily targeting apple and pear orchards, while the smaller model, one-third the size, is intended for grape and persimmon farms located in narrower rows. Additionally, Kisui is creating an online platform named Newton, aimed at providing real-time insights regarding crops, diseases, and overall farm management. The retail price for Adam is projected at approximately $20,000 in international markets.

Despite assumptions that Japanese farmers may be hesitant to embrace technological advancements, Blum reports positive feedback from the agricultural community. “I’ve been really amazed by the reaction of the farmers,” he remarked. “They’ve been very receptive, very willing to give advice, very willing to try Adam.” Feedback from these farmers has significantly influenced the development of the robot; for instance, the transition from a touchscreen interface to physical buttons was made considering that farmers often wear gloves which are not compatible with touchscreens.

Kisui Tech has successfully completed its first paid proof of concept involving Adam, which was deployed to automate patrol and data collection at a solar power facility for a Japanese energy company. Moreover, requests have also emerged from the construction sector, seeking to utilise the robot for tasks such as patrol duties, security, and the transportation of heavy items.

Blum emphasised the broader potential of Adam beyond agriculture, asserting, “We see Adam as a tool, not just for farming, but basically all outdoor work.” As the release of Adam approaches, the implications of such technological innovations could play a significant role in shaping the future of work in Japan as the country grapples with its demographic realities.

Source: [Noah Wire Services](https://www.noahwire.com)

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