

# **INSTITUTE OF AGRICULTURE ENGINEERING**

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Chair in Agricultural Engineering in the Tropics and Subtropics

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## **Development of an Energy Efficient Drying System for High Quality Litchi Processing in Smallholder Cooperatives**

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## **Foreword**

*A toothpaste factory had a problem. On the last conveyor belt – where the toothpaste boxes were packed – was sometimes a box with no tube inside, meaning an empty box would be shipped. To solve this problem two engineers were hired. Six months (and US\$8 million) later, they came up with a solution: a high precision balance coupled to the conveyor belt and controlled by a computer. Whenever a toothpaste box weighed less than it should, the line would stop automatically and a hydraulic arm would remove the defective box.*

*Three months later, the CEO looked at the reports and read the amazing results. No empty boxes had been shipped out of the factory since the balance was installed. However the report also showed that in the last two months, the system had been switched off. He called the supervisor, the manager and the director, but no one could explain why. Finally, he spoke to the factory workers, who said they had turned the system off themselves, adding:*

*“It was creating a lot of work; the system froze all the time, slowing production.” One of them explained, “We decided to do it in our own way; each of us contributed some money, then we bought an US\$80 fan and placed it near the conveyor belt. Every time an empty box went by, it was blown off the conveyor by the fan.”*

(Author unknown)



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