From Sri Lanka to Singapore

by Catherine Wheeler

Born in Sri Lanka and now living in Singapore, chemist Hari Gunasingham is among Asia's leading innovators. The son of a diplomat, Dr. Gunasingham lived in Washington, Bangkok and Sri Lanka while growing up. He took a degree in chemistry and a Ph.D in analytical science at England's Imperial College.

From England, Gunasingham moved to Singapore, where he taught at the National University for ten years. In 1985, he began to develop process control technology for agriculture industries in developing countries. One of his first projects later led to the development of SYNAPSE, a PC-based commercial process control system.

In 1990, he and colleagues Bhaskar Narayanan and Wong Mun Leong left the university and started Eutech Cybernetics, a research and manufacturing facility, which now employs about 100 people. A subsidiary in Sri Lanka with 12 staff was set up to execute a project to optimize the manufacturing of tea. One of the first set of industrial applications funded by IDRC was the adaptation of the SYNAPSE software to optimize the manufacture of tea in Sri Lanka.

The tea produced on Sri Lanka's 600 tea plantations is vital to the country's economy, but obsolete equipment and traditional processes lead to waste, cost overruns and environmental damage. The tea leaves are dried in wood-burning ovens, which mostly burn inefficiently. Fuelling the ovens is leading to significant deforestation and air pollution.

SYNAPSE optimizes the process by monitoring temperatures, explains Gunasingham. By ensuring that the fires burn more efficiently, we can conserve trees and cut down on air pollution. When fully developed, SYNAPSE will be a full management information system including inventory control, payroll, record keeping, purchasing, and distribution.

A prototype of SYNAPSE is now installed in one tea factory in Sri Lanka. It and other factories in Sri Lanka will serve as demonstration sites for the transfer of the technology to neighbouring tea-growing countries and to other industries such as food processing, palm oil production and petrochemicals.

Gunasingham intends to incorporate the technology into new tea manufacturing equipment. "It's early days yet, but we should see some real results in 1996 or 1997. Between the 600 tea plantations in Sri Lanka and 4,000 in India, there will be a very significant environmental impact if the software is widely used to ensure the ovens burn more efficiently."

Other applications of SYNAPSE are in the areas of pollution control, resource recycling and recovery, and energy conservation in selected highly polluting industries in the Asia Pacific and in Canada.

"Hari Gunasingham is a brilliant, shy entrepreneur," states Randy Spence, the Director of IDRC's Asia office. "He has brought together development and technology in a unique way. Hari's is the first project of
Innovations like SYNAPSE are highly suited to contributing to sustainable development, a favourite subject for Gunasingham. "To be an agent of change, your model must be one of sustainable development," he says. "I would say that the corporate vehicle is a very good vehicle for sustainable development because it is efficient, not wasteful."

A family man, Gunasingham balances the demands of a new business with the needs of his wife and two daughters, aged five and ten. Despite a six-day work week, Gunasingham claims that he never needs a holiday. "A holiday as a logical break from work is alien to me. What would I do on a holiday rest, enjoy myself? I do those things in my normal day."

Gunasingham continues to play his role as visionary-in-residence, contributing his own ideas and creating an atmosphere in which others can innovate. His aspirations? "I want to overcome my limitations, improve my knowledge, try to be creative, and do things that are of some use and can be applied to make life easier and better for people."

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