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Empowering women by vaccinating chickens

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Australian veterinarian Robyn Alders developed a sustainable vaccination program immunising chickens against a deadly disease, ensuring millions of women in Asia and Africa have a reliable source of income and food.

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In villages across Asia and Africa, chickens are often the livestock of choice and the only one over which women have some control. But the highly contagious and deadly Newcastle disease is a constant threat.

Over the past 20 years, Australian veterinarian and researcher Associate Professor Robyn Alders AO has been instrumental in rolling out a sustainable vaccination program that immunises chickens against the disease, empowering women by providing them with a dependable source of income and nutritious food.

More than 60 million chickens have been immunised using the vaccine developed by Australian scientists, in countries including Mozambique, Tanzania and Malawi. The economic benefits so far are estimated to be worth more than A\$100 million, according to the Australian Centre for International Agricultural Research.

“Internationally, the most commonly raised livestock are village chickens. That’s why I have spent a lot of my time working with them,” Alders says. “You can trade and barter them. I find families keep them like petty cash to meet immediate needs like getting kids to school or buying medicine. Before the vaccine was introduced, they didn’t often eat them because they never knew what tomorrow was going to bring.”



Robyn Alders in Central Tanzania in 2012. Credit Sally Ingleton.

Improving animal health to improve human health

Growing up on a mixed sheep and beef farm at Taralga, near Goulburn in New South Wales, Alders saw the struggles farmers faced first-hand, including internal parasites in livestock and cyclical droughts. She chose to study veterinary science at the University of Sydney and became interested in social justice and international development while living at Wesley College at the university.

She did her PhD in veterinary immunology at the Australian National University. In 1989, she went to work at the University of Zambia to share the benefits of the education she received in Australia and help improve animal health in Africa. She says that, in turn, improves human health. It was during her three years there that she began researching Newcastle disease.

Outbreaks of the disease – known as ‘measles for chickens’ – can wipe out most of a village’s chickens once or twice a year. It’s a big problem in communities where their meat and eggs also provide animal protein, which contains essential amino acids and micronutrients.

“If you have a diet that’s solely plant-based or has a heavy emphasis on staples like rice or maize, it’s nutritionally inadequate,” Alders says. “Eggs, chicken meat and milk improve the diet of children and pregnant and breastfeeding women.”



Robyn Alders awarding certificates to community vaccinators in Timor-Leste. Credit: Joanita Jong

Australian vaccine with global impact

Scientists from the University of Queensland, funded by the Australian Centre for International Agricultural Research, developed a vaccine that could survive for a few days without refrigeration. In 1996, they called on Alders to help roll it out in Africa.

When the vaccine was first introduced in Asia in the 1980s, it was coated onto chicken food. The best vaccine food carrier was cooked white rice.

“In Mozambique it became clear that if there was cooked white rice around, it definitely wasn’t going to the chickens,” Alders says. She worked with farmers to set up trials, and found using an eye dropper was the best vaccination method.

In 2003, Alders helped establish the KYEEMA Foundation, a non-government organisation (NGO) which links researchers and specialists with expertise in Newcastle disease to continue the work in Africa and implement vaccination programs.

The master seed for the vaccine is available from the University of Queensland. It is now used in Tanzania, Angola, Ethiopia, Kenya, Ghana, Nigeria and Senegal in Africa, as well as Asian countries including Malaysia, Indonesia, Vietnam, Laos and Myanmar.

Alders was also called upon to help farmers hit by Newcastle disease in rural Madagascar in 2012. With partners from San Francisco Zoo and Harvard University, she helped set up a sustainable vaccination program in the country so that vaccines could be produced locally, and training given to national scientists and community members.

“When we’re in the communities selecting people to train as community vaccinators, our aim is to have half women and half men,” Alders says. “We often find, particularly in Sub-Saharan Africa, women tend to be

more consistent with the work. Sometimes men will go off in search of higher paying work. We try to have training close to the household at times that are convenient for people, especially women, and to do the training in the language that's most accessible.”

Since that project she has continued to work with Harvard ecologist Chris Golden through the Planetary Health Alliance, a network of universities and NGOs whose members are interested in the health of human civilisation and the state of the natural systems on which it depends.

In 2014, Alders began working in Timor-Leste as part of a program funded by the Department of Foreign Affairs and Trade to help improve access to food from animals.

“In Timor-Leste, one in two children don't have an adequate diet,” she says. “They are short for their age and don't develop the intellectual capabilities that they should.”



Robyn Alders teaching farmers in Madagascar. Credit Graham Crawford.

Taking a new look at nutrition

Alders was the first female veterinary science graduate to be invested as an Officer of the Order of Australia in recognition of her contribution to international development and global food security.

In February 2017, she received the inaugural Mitchell Humanitarian Award, named after Australian businessman and philanthropist Harold Mitchell AC. “It highlights the importance of women's contribution across agriculture and animal health globally,” she says.

Alders is now pursuing domestic and international food and nutrition security research and development activities as a Principal Research Fellow at the University of Sydney's School of Life and Environmental Sciences and the Charles Perkins Centre.

When she's not on the road, Alders works on her 200-hectare farm near Crookwell in the NSW Southern Tablelands where she raises merino sheep and a few beef cattle.

“Because I was away for 20 years it would be very hard to understand what farmers face in Australia unless you have a go,” she says. “The reason I came home is that I feel that we’ll never really improve the nutritional situation in low-income countries if they continue to aspire to be like us, because we have overshot the mark. We don’t have well-nourished, healthy people in many high-income countries; we have overweight people with poor diets.

“It’s time to revisit our food systems and try to set a good example.”

Find out more about [Associate Professor Robyn Alders](#).

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