A community health project in Vietnam is combining smart science, technology and people to control the spread of dengue fever.

Mapping mosquitoes in Vietnam

by Simon Kutcher, Australian Foundation for the Peoples of Asia and the Pacific (AFAP), Vietnam
As the warm orange glow of sunset illuminates the 2,000 households of Thanh Tri, Vietnam, 52 village health workers reflect on their achievements. Over the past three years they have worked with every household in their Mekong Delta community to practically eliminate the dengue mosquito, *Aedes aegypti*.

In a world where dengue is the most widely distributed mosquito-borne virus affecting an estimated 100 million people each year, their results are remarkable. They have achieved a 99.3 per cent reduction in the prevalence of this deadly pest.

The program is not only environmentally friendly and affordable, it also targets the entire community, teaching everyone from community leaders to school children how to recognise and collect *Mesocyclops*. This allows the communities to control mosquitoes themselves.

Currently the program is operating in 12 communities in the Mekong Delta, protecting nearly 120,000 people in about 20,000 households from dengue. On a recent visit to the project the Australian Ambassador to Vietnam, Allaster Cox, said: ‘Vietnam has been remarkably successful in mobilising communities to take responsibility for the control of dengue. The success of these programs and the strong support from the Government of Vietnam should be heralded as an example of what can be achieved when local community members are empowered to take responsibility for their own health.’

The project’s success relies on the 40–50 village health workers assigned to each community, who are responsible for monitoring the presence of *Mesocyclops* and the dengue mosquito in each household.

The village health workers also have a new high-tech tool to help. Ramon Shinkfield, an Australian Youth Ambassador for Development with geographical information system (GIS) skills, recently spent 12 months with AFAP to map dengue mosquito breeding hotspots.

Ramon used GIS to crunch through months of data collected by health workers to produce maps showing mosquito patterns and trends at the household level. This has provided program leaders, village health workers and the community with an image of where the project has been successful and which areas need more effort.

Dr Peter Ryan from one of the project partners, the Queensland Institute of Medical Research, said: ‘Very few community-based health projects have been able to utilise new technologies such as GIS in any meaningful way. The fact that Vietnamese scientists and program managers can now map community data down to the household level, analyse results, and distribute resources according to priority and need, represents a very practical application of GIS in a public health setting.’

During his assignment in Vietnam, Ramon provided specialist training in GIS data management and analysis methods to 30 staff from the Vietnamese Ministry of Health to equip them with the skills to monitor the program.

The dengue control program demonstrates that a community-led approach combined with innovative solutions and smart technology can provide a powerful outcome for sustainable change.

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**Lower left:** The *Mesocyclops* is a predator that eats the dengue mosquito larvae.

**Top left:** School children from the project.

**Top right:** The dengue mosquito, *Aedes aegypti*.

**Photos:** Simon Kucher, AFAP

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