A few months ago, when 45-year-old Rita Soares, who lives far from a health post, developed a fever, she felt drained and wondered how she would get treated. In fact, help arrived in the shape of a community health worker who came to her and tested her for malaria.

“When it turned out that I had malaria, he gave me the medicine I needed and I was soon feeling better. I am really grateful as I didn’t need to go to a city hospital for either tests or for treatment.”

Much has changed in the malaria programme in Timor Leste.

Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected Anopheles infected mosquitoes. An estimated 3.3 billion people are at risk of malaria, of whom 1.2 billion are at high risk. There were an estimated 198 million cases of malaria worldwide in 2013, and an estimated 584 000 deaths.
Malaria is an acute febrile illness. Early symptoms are fever, headache, chills and vomiting – may be mild and difficult to recognize as malaria but If not treated within 24 hours, *P. falciparum* malaria can progress to severe illness often leading to death. Children with severe malaria can develop severe anaemia, respiratory distress, or cerebral malaria. In adults, multi-organ involvement is also frequent. The best available treatment, particularly for *P. falciparum* malaria, is artemisinin-based combination therapy (ACT). The concerns are of emerging parasite resistance to antimalarial medicines and mosquito resistance to insecticides.

In tropical Timor-Leste, it is early morning. A team of 4 uniformed men can be seen trawling a crocodile-infested wetland area just outside the capital city of Dili.

The men are equipped with soup ladles, pipettes and plastic bowls. Their eyes riveted to the ground, they are taking water samples for collection and storage in little plastic containers. These Ministry of Health staff are working for the National Malaria Control Programme in Timor-Leste. One of their tasks: to survey the density of mosquito larvae in the water and identify the different species in order to better understand the main vectors, how they behave and how to develop efficient measures to deal with them and thus protect people from malaria.

“In 2006, when I started to work with WHO on malaria control as a consultant, we had no equipment for entomological surveys in Timor-Leste and only 2 full-time staff in the Ministry,” reports Dr Manel Yapabandara, WHO Technical Advisor on Malaria. “So I brought microscopes from my home country Sri Lanka and bought some soup ladles in the local supermarket so we could carry out the survey. I also sewed my own mosquito traps using netting material I bought in the market.”

**Examining mosquitos to prevent malaria**

Entomological surveys are the backbone of malaria prevention measures. Depending on the type of the mosquito, where it breeds, when and where it rests, how it bites and how susceptible it is to insecticides, local authorities can assess the best malaria prevention approaches.

Dr Manel’s surveys have enabled the National Malaria Control Programme to limit yearly indoor residual spraying with insecticides to those areas that it has identified as epidemic prone and high risk areas. The Programme has distributed long-lasting insecticide-treated bed nets to people in other malaria risk areas.

These surveys are repeated once a month and local malaria vector control actions adapted accordingly.

“Initially, the malaria programme focused mainly on the people displaced through civil unrest in 2006. The priorities were diagnosis and treatment,” says Dr Manel. “Very little attention was given to prevention.”

**Huge strides in malaria prevention**

With increased political commitment, advances in diagnostic testing and treatment and financial support from the Global Fund to Fight AIDS, Tuberculosis and Malaria, with support from WHO, Timor-Leste has made huge strides in the prevention and control of malaria in recent years. Today, all areas where there is a risk of malaria have control and prevention measures in place. All public health facilities are equipped to diagnose and treat the disease.
The ingenuity and perseverance of Dr Manel and her counterparts in the Ministry of Health have paid off: within only 6 years, the number of reported malaria cases in Timor-Leste dropped from 220 cases per 1000 people in 2006 to less than 1 case per 1000 in 2013.

Today the Government is making efforts to reach out to remote communities and train community health volunteers to diagnose malaria, treat uncomplicated cases and refer more complicated ones to the nearest health facility. The volunteers also check whether ed nets have been put in place and help families to mount the nets if needed.

Ingenuity and perseverance – these efforts from dedicated personnel in the malaria programme in Timore Leste have not only made a dramatic improvement in malaria cases, but also leave many lessons learnt for other health programmes.