

Preventing malaria in the region

Relevance to APLMA AQMTF

THEME 4: improving and/or increasing the use of preventive measures, including nets and insecticides

What's happening?

Several countries in the region have a long and proud history of strong vector control components in their malaria control programmes stretching back to early in the 20th century. Many of these programmes have re-oriented, and lost much of their capacity for vector control. This was partly related to the decline in support for house spraying, which was not shown to be effective in some environments, but also to cutbacks in specialized staff as vertical programmes were replaced by more integrated systems.

Great progress has been made in many countries in increasing coverage of LLINs, and the culture of using nets is strong.

The need

- Prevention will be a key component of achieving malaria elimination
- As resistance of malaria parasites to drugs increases, we need to be ready with non-drug strategies to keep transmission down

Key issues in preventing malaria in Asia-Pacific

- How to rebuild expertise in public health entomology
- Keep pushing to achieve and maintain high coverage of long-lasting insecticidal nets in populations at risk
- Focus further on stratification to allow cost saving through better understanding of areas of transmission risk
- In areas with outdoor biting and where people work or sleep outdoors, LLINs need to be supplemented with other forms of personal protection, but we have limited evidence of what works. How to protect migrant populations
- Pyrethroid resistance is not a great problem in Asia, but could arise. Capacity to detect and track it is lacking. If pyrethroid resistance in Africa gets worse, the large market for LLINs manufactured in Asia could suffer



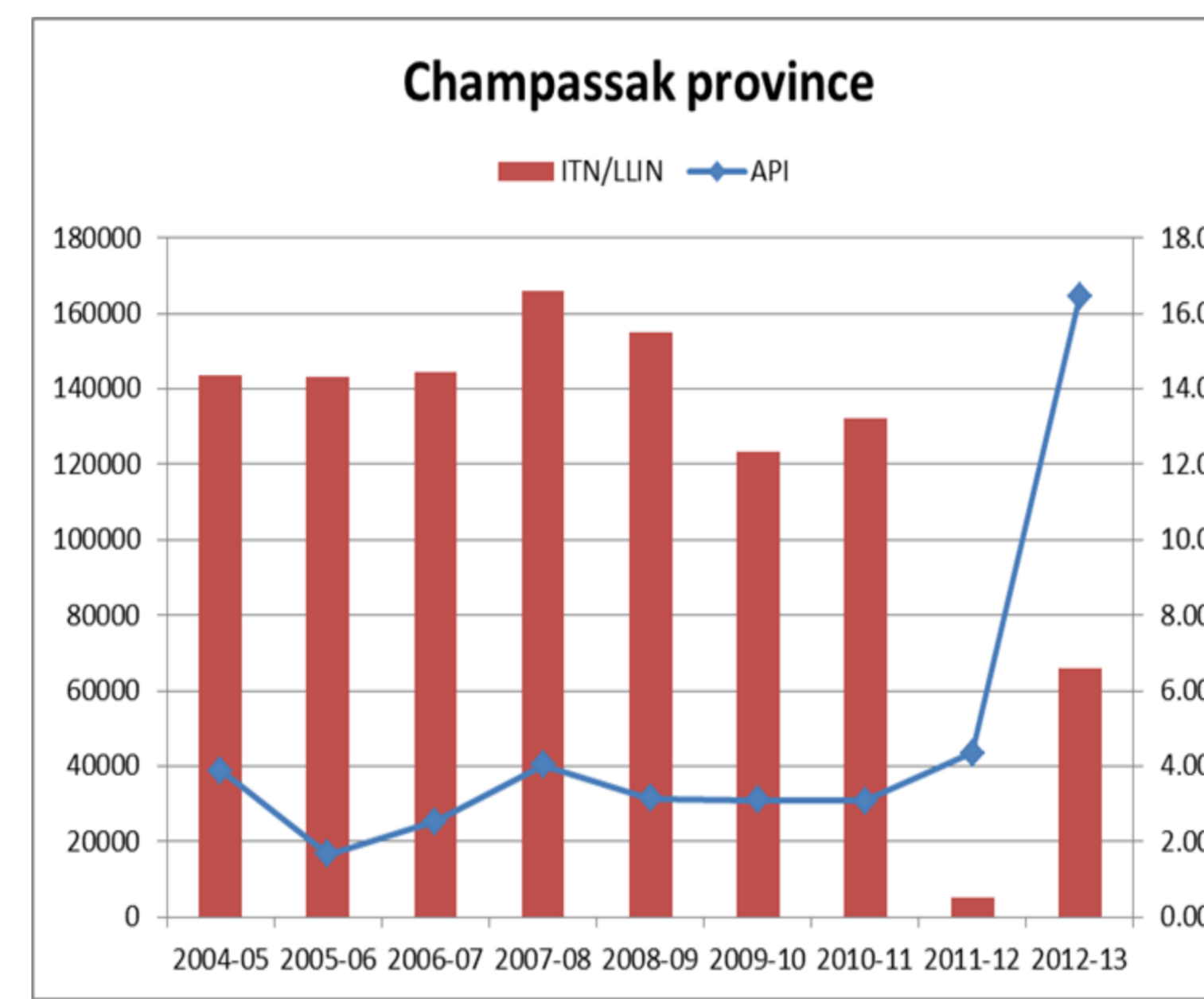
Mon Mon San, demonstrating her rubber tapping skills in Kadan Kyan, Southern Myanmar. Photo: Malaria Consortium

Evidence of efficacy of insecticide-treated nets

Untreated mosquito nets were shown to provide 60% protection from clinical malaria in central Vietnam, except for people who regularly slept unprotected in the forest. In Cambodia, deltamethrin treated nets provided around 28% protection in adults and 35% in children under five, but the results were not statistically significant. In Lao PDR, health facilities data showed a substantial drop in malaria cases and infection one year after insecticide-treated nets (ITNs) distribution, and mosquito density and blood feeding declined in intervention villages. In Western Myanmar, lower but not significantly different incidence and prevalence of *P. falciparum* was observed in villages with ITNs than no nets. However, the most important vector in the region, *An. dirus*, was rare amongst the vectors biting humans in this study.

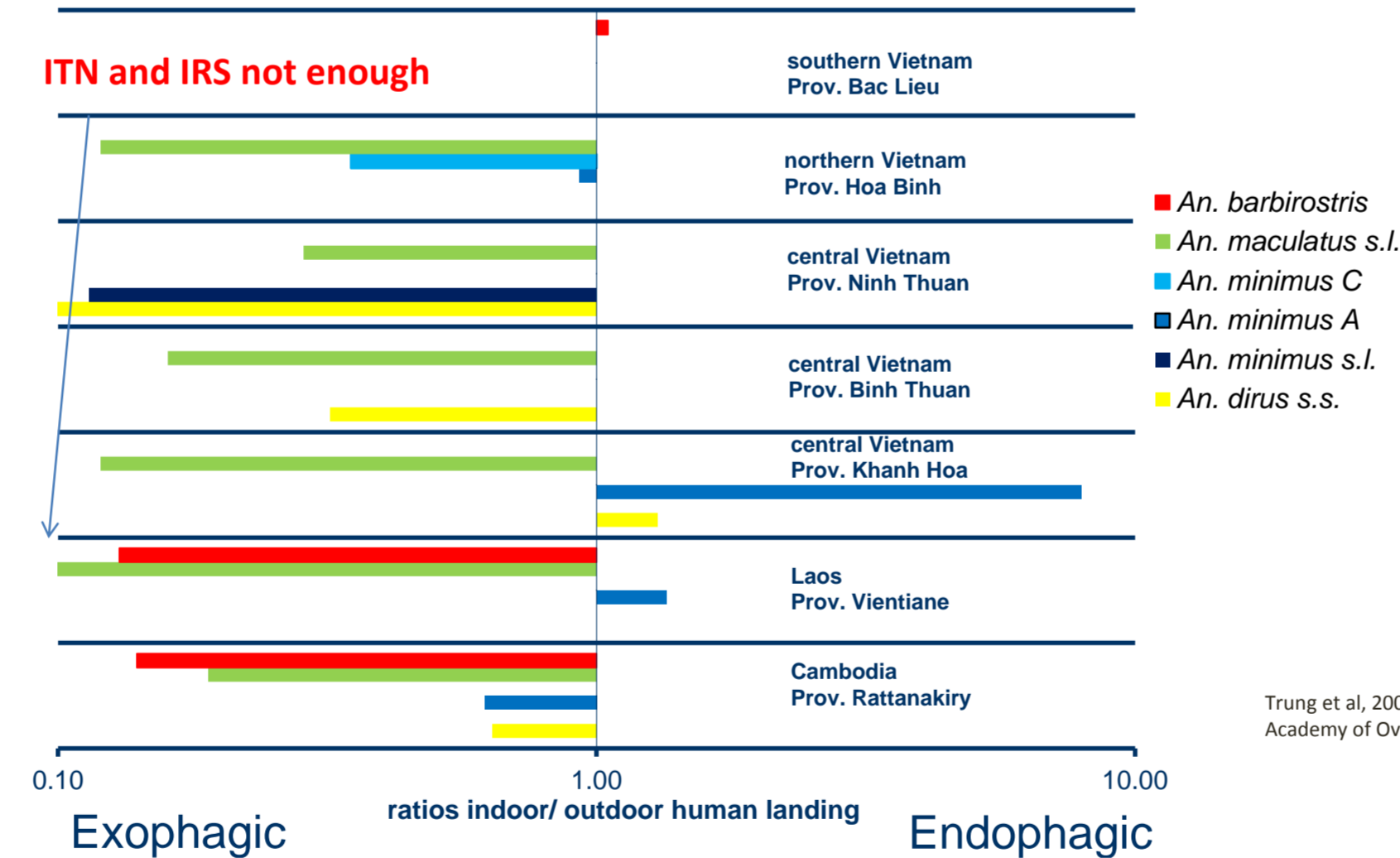
Prioritising ITN/LLIN Coverage in Conditions of Scarcity

- In 2011 -2012 Lao PDR had insufficient LLINs & gaps in coverage → major epidemics
- Urgent need to fill the funding gap (MOH, donor agencies)
- Interim strategy for damage limitation was needed
- Stratification tool could target inadequate numbers to areas of greatest need



Source: Lao PDR Malaria Programme Review 2013, CMPE, MOH

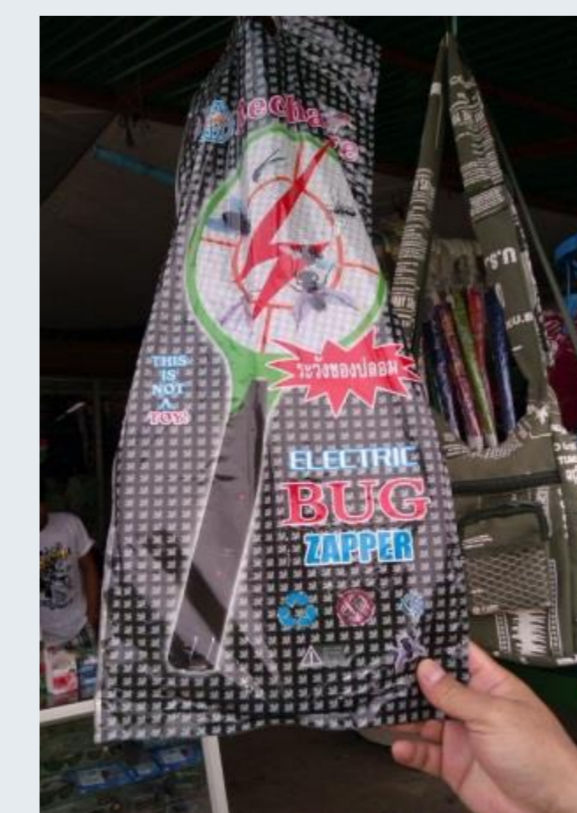
Outdoor biting in Greater Mekong Subregion



Trung et al, 2005 Trop Med Int Hlth, 10, 251-62; Coosemans & Van Bortel, 2006 Royal Academy of Overseas Sciences, pp.551-569

Alternative personal protection tools

- Research required to understand target segments KAPs for malaria prevention
- Potential for outdoor transmission personal protection tools
- Potential for new product development
- Engagement with the private sector
 - Tropical repellents
 - Spatial repellents
 - Insecticide treated clothing
 - Treated blankets / tarpaulins
 - Other



Protective behaviour by a Burmese rubber tapper

Mon Mon San works as a rubber tapper in Kyunsu township in Kadan Kyan in Southern Myanmar. She is in on the farm for six hours from 2am and she and her co-workers are at high risk of contracting malaria.

However, Mon Mon San has never suffered from malaria, unlike her co-workers and fellow villagers, because she behaves differently when it comes to protecting herself. As a result, she was selected to take part in a Department for International Development funded Malaria Consortium project on behaviour change, working with those who show 'positive deviance' from the norm.

"When I am working I always use long sleeved shirts and trousers so I am not bitten by mosquitos. I never get sick." She also wears long rubber boots, which not only prevent mosquito bites but also protect her from other insects in the forest. She always covers her head and face with a scarf.

"Although it is hot in the rubber farm, it is worth wearing these clothes to avoid malaria. When I am home, I always sleep under a long lasting insecticidal net to avoid mosquito bites and enjoy a sound sleep.

"I feel very happy because the community follows my practice. They say I set a good example to prevent malaria and I can see how the villagers have become more healthy as a result of this."



Mon Mon San, demonstrating her rubber tapping skills in Kadan Kyan, Southern Myanmar. Photo: Malaria Consortium

Options for AQMTF Action

- Develop strategies for building a new cadre of public health entomologists
- Given the high burden of dengue in many countries, look at how this cadre can engage in vector control across diseases
- Promote mapping and surveillance of vectors
- Consider the impact on Asian industry of pyrethroid resistance

Further information and sources

Malaria Vector Control Commodities Landscape, UNITAID 2013
www.unitaid.eu/images/projects/malaria/UNITAID_Malaria-vector-control-landscape_1st-edition.pdf
 Kolaczinski J, Macdonal M, Meek S. 2014. Vector control to eliminate artemisinin resistant malaria in the Greater Mekong Subregion, Lancet Infectious Diseases, 14, 9-11.
 A video about Mon Mon San and Malaria Consortium's work on using community members to influence behaviour change among at-risk groups can be viewed at: www.youtube.com/watch?v=v1mtuFrDkBY