

## CONCLUSIONS

The main purpose of the Mekong Malaria III monograph (MM III) is to update MM II and provide interested readers with the most accurate information currently available on progress made since 2002 in malaria control in the Greater Mekong Subregion. This monograph points out important gaps in knowledge and in implementation affecting progress towards malaria elimination. Preventing the re-introduction of malaria into the region post elimination is beyond the scope of this document.

As described in Chapter 1, the population dynamics of the Mekong region are evolving rapidly, and some might say too fast to allow people to access basic commodities and services to reach a more comfortable and healthy life as envisaged in the ASEAN roadmap. According to the data detailed in Chapter 2, control efforts in the Mekong region have contributed towards a huge impact on malaria mortality and morbidity during the last decade, well beyond expectations. These results are not only due to better funding from international donors leading to scaled-up malaria-specific interventions, but also due to improving socio-economic conditions. Many large-scale economic development projects are ongoing, perhaps to the detriment of both conservative traditional culture and the environment, forcing people to adapt and often leading either to the expansion or to the disappearance of different vector-borne diseases. These artificial and sometimes huge modifications of the environment (*eg*, climate change) have ramifications in various domains including that of disease vectors which, as described in Chapter 3, may adapt to the rapidly evolving landscape. As described in Chapter 4, both mega- and micro-development projects impacting on the forest or creating new conditions suitable for vectors, often attract a substantial workforce from various horizons across borders and cultural boundaries. While one of the first concerns is to ensure that these vulnerable mobile people access basic services including healthcare, another key concern is to restrict or mitigate the widespread dispersal of parasites by these elusive population groups.

As detailed in Chapter 5, the Mekong region remains the epicenter of malaria parasite resistance to all antimalarial medicines. Progressing towards malaria elimination in most countries means a smaller number of parasites facing a less diverse but more widely promoted variety of treatments (like artemisinin-based combinations). As described in Chapter 6, effectively eliminating all parasites including those suspected of having developed resistance, in an environment where submicroscopic infections are documented as more prevalent than previously thought, is a key concern and is triggering additional basic and operational research. More collaborative efforts are needed between all stakeholders including academic institutions, individual researchers, decision-makers, non-governmental organizations, funding partners and local communities. This goes far beyond the normal health remit. Innovative ideas and concepts

need to be taken from the private sector. How best to engage communities to reach, maintain and monitor malaria elimination and how best to engage decision-makers and profit-oriented private institutions to continue to invest in malaria surveillance and response using modern communication tools remain unanswered questions for the time being.

Thanks to a substantial increase in external funding and to new tools and delivery strategies developed during the last decade, the malaria response in the GMS has become increasingly efficient, leading the dramatic reduction in the malaria burden. With less external funding expected in the coming years, there is a need to convince national governments and private institutions to continue to invest in malaria elimination and to engage supranational institutions into better harmonized measures and balanced investments to support health improvement.

While progressing towards new milestones, many tools have started to show their limitations: Microscopy and ACT are imperfect weapons for elimination; Mass Drug Administration (MDA) or Focal Screening And Treatment (FSAT) have proved too complex to become fully operational under field conditions (see Chapter 7); Fast evolving, electronically driven, real-time applications and devices to boost geographical surveillance and response are not yet sufficiently developed or solid enough to be officially endorsed by decision-makers and applied as a single tool by all sectors.

Malaria is a hugely complex disease with many interconnections as expressed in the numerous published peer-review papers and cross-sectoral reports, which are increasingly raising more questions than solutions. It is an exciting time for the global malaria agenda and for the Mekong malaria journey in particular: There are many discoveries ahead, a good number of which will go beyond malaria *per se*, exploring new health system approaches, using modern technologies at their best and, within an increasingly decentralized political system, better engaging local communities to control and monitor the disease.