

# Introduction: Mekong Malaria

Malaria is one of the most serious communicable diseases of mankind. It is a threat to global prosperity, to economic development throughout the tropical and subtropical zones of the world, to alleviation of poverty and to attaining greater equity among the world's peoples. The Greater Mekong Subregion of Southeast Asia stands astride one of the most threatening foci of malaria in the world: new strategies and new tools are needed to cope with this challenge. Global objectives require regional and local planning to bring them to fruition.

This monograph brings together recent malaria data from the six countries of Southeast Asia that constitute the Greater Mekong Subregion: Cambodia, China (southern provinces), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand and Viet Nam, and takes advantage of the capacity of geographical information systems (GIS) to facilitate rapid cognition of large data sets. Opportunity is taken to inter-relate disease patterns with summary economic and social data from the six countries, and with the process of economic change in the region, so to broaden the perspective for co-operation in disease control among the countries and international agencies concerned. It is hoped that both economic planners and health planners can gain from this multi-sectoral overview.

The region is undergoing many physical, social and economic changes, some of which are associated with the dynamic process of population movement within countries and across international borders by road, rail, water, air for commerce, trade, family reunion, tourism and other activities. With large population mobility there is an accompanying risk of increased transmission of infectious diseases among the travellers and the resident communities.

Malaria is one of a number of communicable diseases that critically affect and are influenced by the development process, with resultant impact on economic and social advance, along with others such as dengue hemorrhagic fever, HIV/AIDS, tuberculosis, influenza, severe diarrhea. They have a liability to expand quickly into epidemics that can threaten both productivity and social welfare of the populations concerned. They do not stop at international borders: they are multi-country problems requiring multi-country solutions that involve many sectors in addition to health ministries.

The Greater Mekong Subregion (the region) is of special focus in this context. The six countries represent a wide spectrum of economic capacity, economic change, population size, health services infrastructure, human and material resources. Despite the diversity there is a degree of interdependence with respect to development objectives and planning needs that make it desirable to examine ways of collaboration in containing communicable diseases. Sharing epidemiological and policy information is a key element in this process.

This region is home to the origins of some of the worst anti-malarial drug resistance, including multi-drug resistant parasite strains. Within and beyond the region these resistant parasites spread inexorably with population mobility when

combined with drug selection pressure, so that the malaria situation in the region is a focus of global attention. Multi-drug resistant malaria poses a serious threat to mankind in terms both of the severity of the illness and its adverse effects on economic development.

The collation and correlation of malaria data from the six countries in consort thus represents a positive starting point from which to build a dynamic, concerted regional data base, despite imperfections and heterogeneity that inevitably exist in many of the inputs. There are constraints related to this starting point: the data are retrospective so to build confidence by sharing information already firmly established. The data are cumulative over a one-year period in each case, in order to begin with a broad overview and gradually work towards more frequent data sharing as logistic considerations in each country permit.

While the main focus is on the overall regional picture, attention has also been focused on the patterns of malaria at the pertinent international borders, to provide an initial indication of the potential for information flow of this kind so as to assist in planning expanded cooperative action between countries sharing these borders.

Together with malaria data we have incorporated selected health, economic and environmental information in order to provide the stimulus for developing correlations with the overall context within which malaria control programs operate. We have also included reference to regional economic development programs in order to provide a brief introduction to the process of major structural changes that affect population dynamics and disease spread.

The technical focus is on GIS representation of the various databases for ready visualisation of the principal trends. The GIS operating system employed for this purpose is MapInfo; however, the initial construction of the regional map by integration of individual country maps derived from various sources was performed in ARC/INFO format and it is also available in ArcView format. The Mekong regional map is part of a broader profile of Southeast Asia and China as a whole prepared by the Australian Centre for the Asian Spatial and Analysis Network (ACASIAN). Using this construct, data can be superimposed at macro or micro level for the whole region or for parts thereof.