

Economic context of malaria

The spatio-temporal profile of malaria apparent from consideration of the disease patterns in the Mekong region makes clear that a diverse range of factors is involved in the epidemiology of the disease, in influencing the outcome of malaria case management and the success or otherwise of control programs. The Mekong vista is one viewpoint in a global perspective that seeks to find more appropriate ways to alleviate the economic and social burden of malaria.

As Sachs and Malaney (2002) have eloquently stated, the simplest of economic calculations show a close link between malaria and poverty. This statement underscores the malaria distribution pattern now as it has throughout history: poverty and wealth have wide ranging connotations with the disease, its occurrence, its spread, its severity and its potential lethality. Mapping of malaria disease patterns provides clear visual evidence of the asymmetric nature of spatial distribution: within and between nations, in stable communities and in mobile populations.

This asymmetry is evidenced by the differing patterns at the macro level between countries and at the micro level among unit areas within each country, as it relates to factors such as environment, employment, transport, communications, access to health services, the quality of those services. These relate in turn to family/per capita income levels and the ability to pay for access to private health systems where public services are inadequate.

To undertake such analyses meaningfully requires extensive databases at local level and at frequent intervals (Indaratna and Kidson, 1995). Such socio-economic data collection is usually carried out by household survey and is not infrequently less complete than disease data collection. In both cases approximations are expected. Such an analysis in Thailand was described in the first Mekong Malaria monograph. Expansion of that base could contribute to rationalization of region-wide resource utilization so to improve the opportunity for coordinated disease control in the Mekong region.

Given the crucial dependence of malaria programs on public finance and family/individual ability to pay it could be helpful to develop dynamic economic databases at various levels, so to be able to quantify fiscal demands and effectiveness as the cooperative process in malaria control in the region moves ahead. We are seeing already now substantial progress in overall disease management, rationalization of resources could add to that progress, if placed on a sound basis of economic evaluation.

Social and economic profiles

Important as the malaria-specific economic issues are, it is essential to place these in the context of the overall demands of the society and the ability of that society to respond appropriately. While health matters are often considered as a specialized ingredient in the national financial pie, disease control is a vital element in social cohesion and general economic health. Nevertheless it is only one of many challenges that national economic planners have to face. To attempt to translate national needs into regional planning is another major step, one that requires economic databases at macro level in addition to microeconomic mapping.

As a starting point it is helpful to review some indicators that provide relative perspective on the 6 countries in the form of the Human Development Report (UNDP, 2002).

Demographic trends. Whatever the current population size of a given country, the rate of economic growth will influence greatly the capacity to provide increasing prosperity. High population growth will tend to cancel the benefits of economic expansion. Although a 3-year period is not long enough to provide accurate projections, the 6 Mekong countries do show some diverse trends in annual population growth rates (Figure 37). Two points are to be noted: the differential annual population growth rates and in some cases the movement up or down in the underlying rate. Of course even such a basic measure of national trends is subject to inaccuracy and small uncertainties can undermine desired economic growth.

There is a general trend in urbanization of populations, given here over a 6-year period 1975 - 2000. This will likely have a growing impact on employment structure, on exposure to communicable diseases like malaria that involve mosquito vectors in their life cycle, and on mobile populations. These trends may also have implications for resource allocation between urban and rural sectors and hence for diseases with differing distribution between these sectors.

In some respects the differential proportions of the respective country populations in young and old age groups have great potential influence on resource allocation both in each country and in terms of potential willingness to contribute towards regional health goals, such as malaria control.

Socio-economic indices. A number of indices have been developed to assist global comparisons and to provide a more balanced overview of quality of life than is evident from gross national product (GNP) or gross domestic product (GDP). These are the human development index, the gross domestic product index, the education index and the life expectancy index. These are given in Figure 38 for the 6 Mekong countries in the years



Figure 37. Demographic trends

1997 and 2000. The most comprehensive, the human development index brings together measures of longevity, knowledge and living standard. The other three indices are more narrowly focused as indicated by their designated titles. While there are variations among the 6 countries, all lie in the low or medium global range.

Economic indicators. For the years 1997 and 2000 purchasing power parity, the measure of real GDP per capita, shows great diversity among the 6 nations (Figure 39), with income in Thailand well ahead of the remainder. When the rate of growth in per capita income is considered, however, China's situation reflects its position as the global leader in economic growth, not just the region. It is not without notice that reflection upon the malaria country profiles these two countries have particularly successful records in malaria control, *i.e.* this success may well reflect in part their overall economic strength, whereas the countries with the highest malaria incidence per capita (Cambodia, Lao PDR, Myanmar) are those with the highest proportion of GDP dependent upon the agricultural sector. While Viet Nam's current PPP is not high, the rate of PPP growth is rapid and perhaps this an element in the improving malaria picture there in recent years. Health expenditure is given for an earlier year (1998) but the diversity among the 6 countries is marked. The accuracy of these figures may be somewhat uncertain but clearly the range of expenditure on the general public health sector is of interest.

Health indicators. Health status would be expected to relate to a number of the above indices, directly to some, indirectly to others. Life expectancy shows a modest rise in all 6 countries over a 30 year period (Figure 40). Infant mortality generally follows a downward trend over a 25 year period, so too does under 5 years mortality rate. Interestingly maternal mortality shows great asymmetry among the countries over 15 years. These figures provide an interesting opening of the door to more detailed assessment of health status, of great relevance to consideration of resources for malaria against the more general health service requirements.

Economic development

This brief glimpse of socio-economic profiles raises questions concerning resource options in relation to the future of malaria control in the Mekong region and the impact thereon in the global context of intercontinental spread of drug resistant malaria. The glimpse is indeed brief, necessarily so, for the measurements we rely upon to provide interpretation of a rapidly changing scenario are themselves undergoing rapid transition. In the first Mekong Malaria monograph, an important final section on regional economic development was included to give a broad overview of the rate and magnitude of economic and environmental change occurring across the region. That section is still pertinent to a projection of economic activity and the likely outcomes as they affect the objectives of regional disease control in the context of overall socio-economic developmental change.

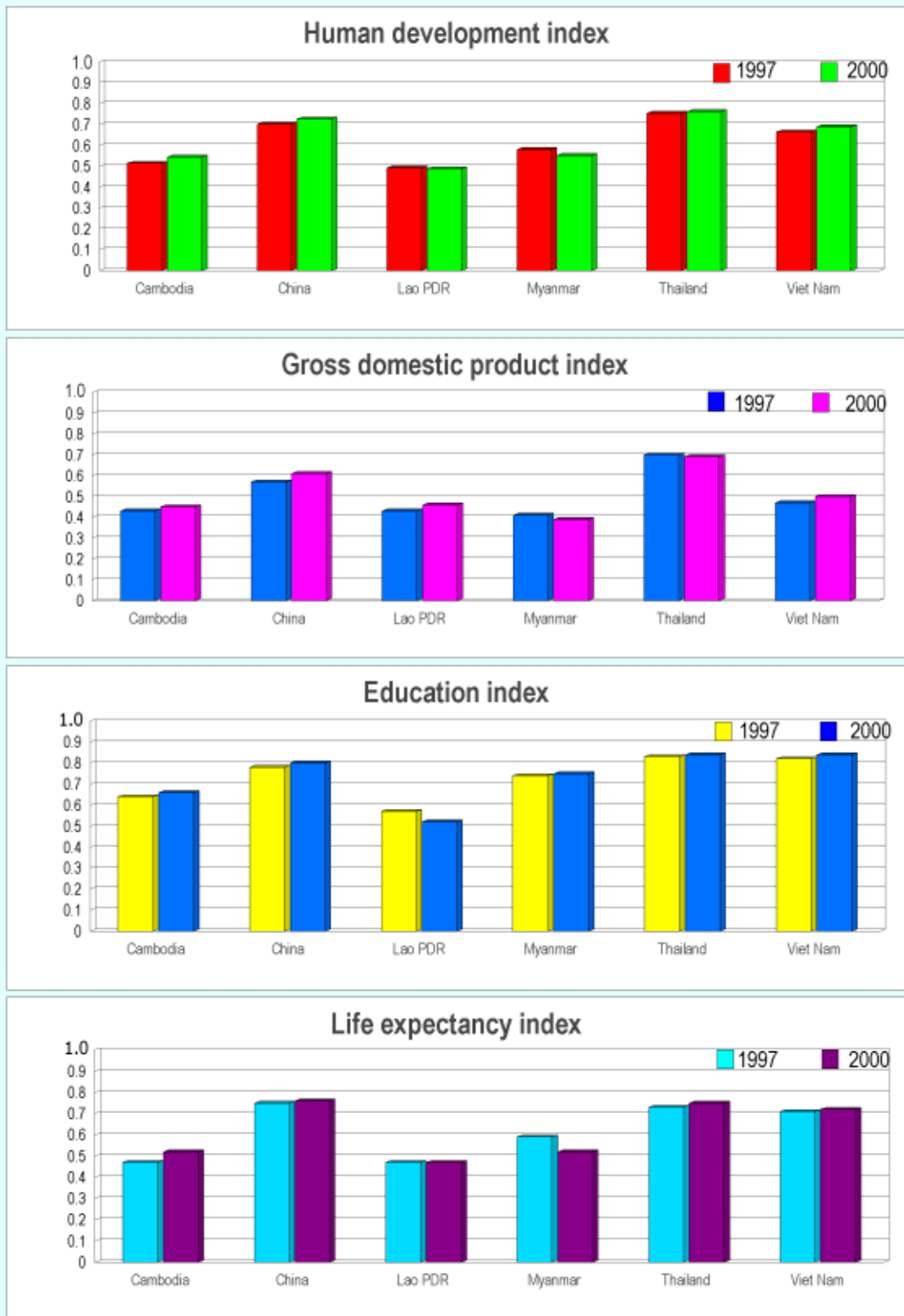


Figure 38. Socio-economic indices

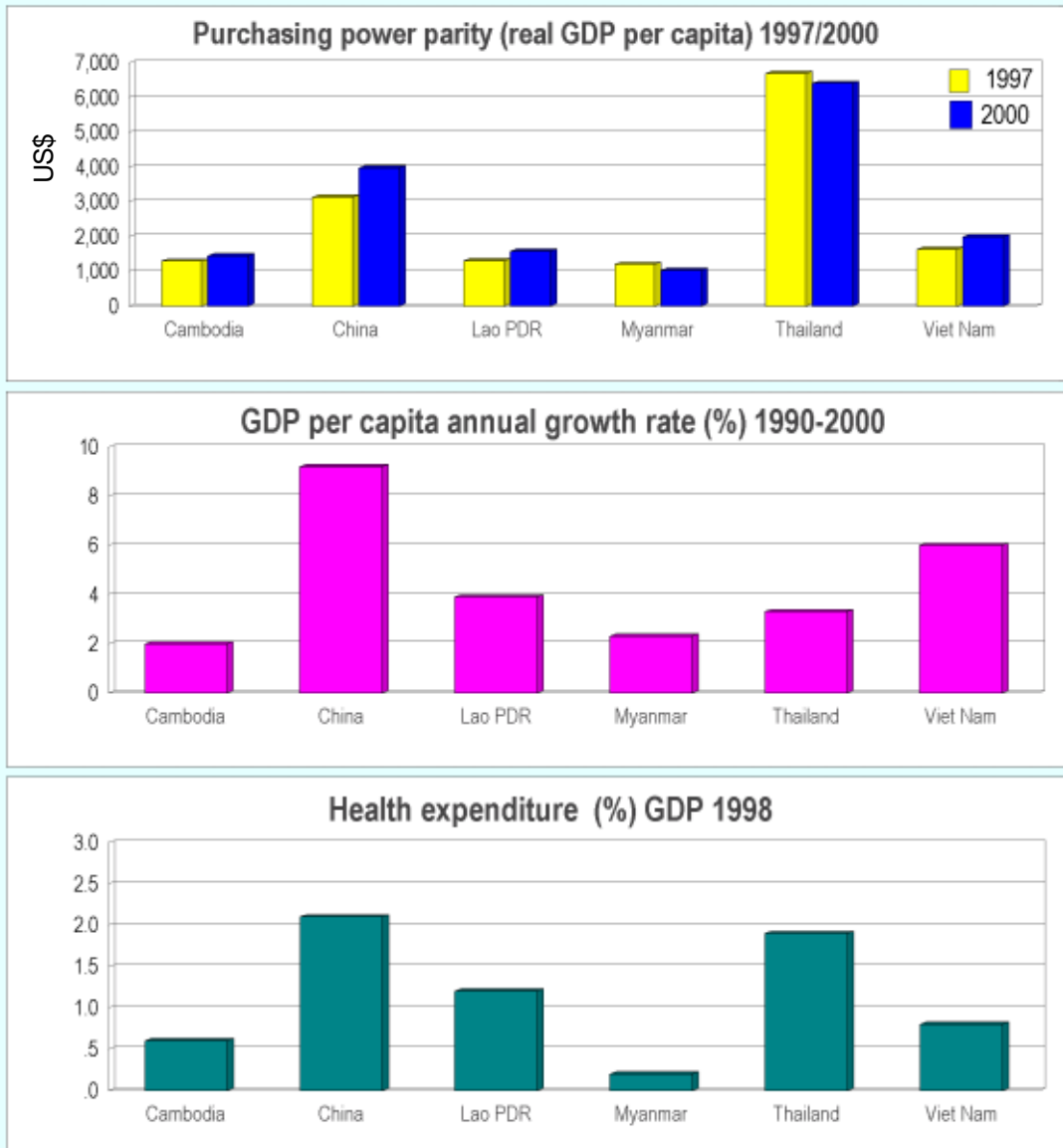


Figure 39. Economic indicators

There is no need to repeat the section details here, as they are already available in the preceding first Mekong Malaria monograph. Suffice to say that much of the future of malaria control in this critical region will depend on the overall patterns of economic development. These can be both positive and negative, so that it is imperative that health planners and economic planners of necessity need to sit together to ensure balance in the respective strategies.

Data sources: Human Development Report , UNDP (2002); World Development Report, World Bank (2003).

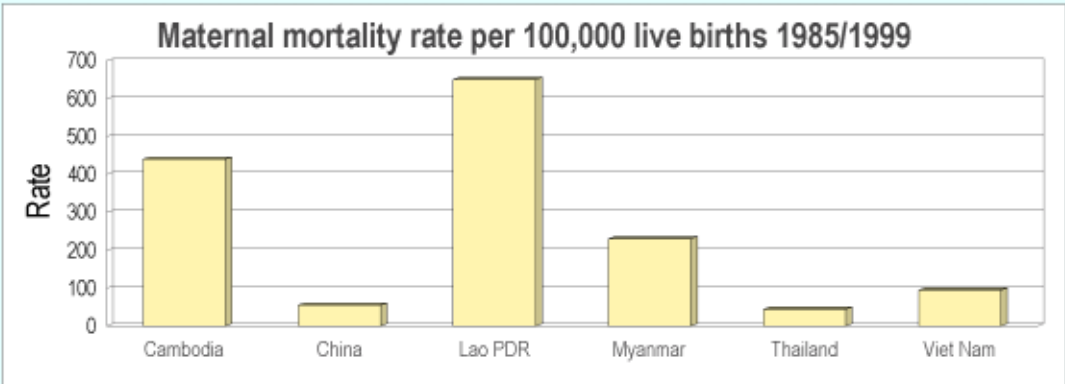
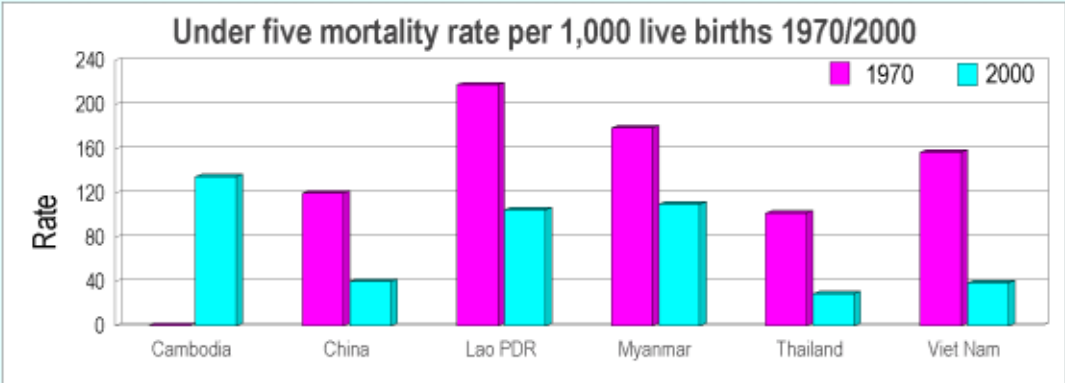
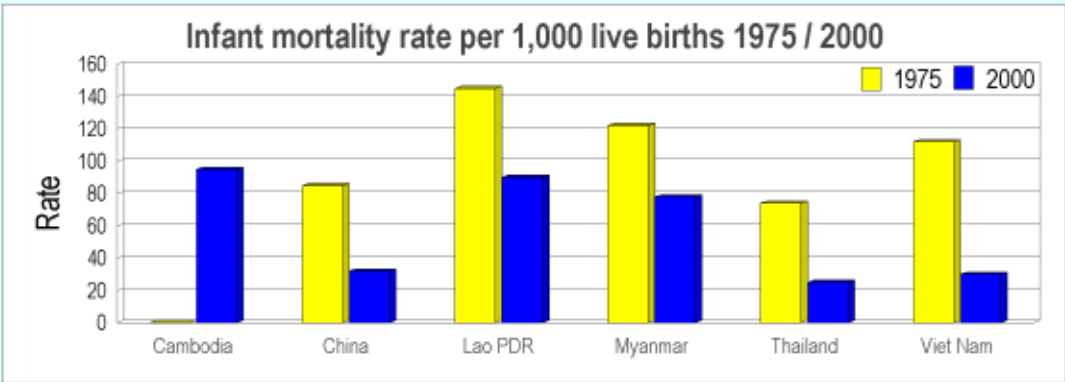
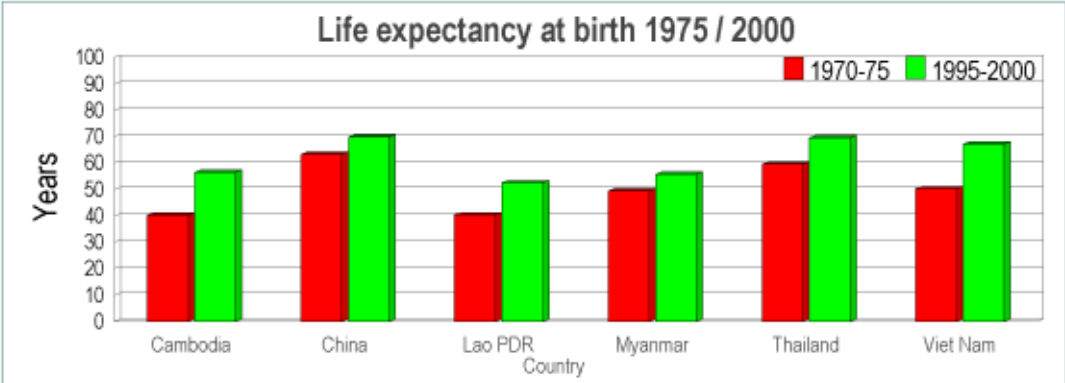


Figure 40. Health indicators