

Figure 42. Health indicators

Economic development

Analysis of economic and social indicators alongside mapping of malaria and related databases leads to a productive synthesis. However, societal, national and regional structure is constantly changing. In this respect the Greater Mekong Subregion is among the most dynamic areas in the world. In addition to national public and private programs, regionally based economic development projects have been completed, are in progress and are on the drawing boards. Many of these programs/ projects accentuate population movement and effect environmental changes that influence the spread of communicable diseases, particularly malaria. It is thus pertinent to bring these programs into consideration in relation in the context of regional malaria control.

The Asian Development Bank, a major player in the development equation, has kindly provided a series of maps that together depict development projects in the region: completed, in progress, planned, projected (Figures 43-50). Superimposed on a conventional base map of the region (Figure 43) are data sets concerning road projects (Figure 44), railway projects (Figure 45), water transport projects (Figure 46), air transport projects (Figure 47), a proposed telecommunications network (Figure 48), power interchange projects (Figure 49) and an overview of tourism “jewelse” (Figure 50).

These perspectives serve to identify a range of investments that together will change much of the physical, demographic, social and economic environment in ways that impact on the epidemiology of malaria and other communicable diseases, and bring new challenges to regional disease control. Thus construction of new road and railway networks accelerates commerce and trade leading to increased economic activity but is accompanied by environmental disturbance that can enhance mosquito vector breeding sites. It also involves non-immune workers moving into malaria endemic areas.

Improved road, rail and water transport facilities accelerate surface movement of populations in and out of such areas leading to conditions that can promote disease transmission but at the same time can improve access to health care facilities. Of course, most large scale surface transport projects are geared to major transport routes, whereas difficulty of access to health facilities is most commonly found in remote areas that are less likely to benefit from road development. Advantage is more likely to flow from the overall increased economic opportunities associated with the development process in some areas.

Expansion of air traffic increases rapid population movement nationally, regionally and globally, leading to enhanced economic activity but also to greater dispersion of drug resistant parasite strains in infected travellers. Tourism also promotes the spread of malaria drug resistance globally: the tourism “jewels” identified in Figure 50 epitomise the abundance of tourist attractions throughout the region.

The development of power grids by interchange of power from hydro, thermal and other sources that aims to enhance industrial capacity of the region will both increase economic activity and change employment opportunities, leading to population redistribution and altered disease patterns. There is also another potential downside: hydro-power requires dam construction, with consequent environmental upheaval and change in watershed characteristics that influence vector borne disease patterns.

The development of a regional telecommunications network will greatly accelerate opportunities for enhancing business, administrative and services efficiency, including the sharing of health/disease data on-line throughout the region. Potentially this should be a very constructive investment and could greatly assist control of malaria and other communicable diseases.

Thus, regional economic development projects have both positive and negative, direct and indirect effects on the health of the people in the six countries. They are critical components to be considered by both health planners and economic planners in forecasting needs and opportunities for improved malaria control on a regional basis at both macro and micro/local levels. Malaria serves both as an infectious disease of great importance in its own right as a prototype of the wider risk of communicable disease more generally in relation to the development paradigm: among project workers, among traders, among travellers, among population subgroups who are displaced, those who lose economically from development and those who gain.

This brief overview is intended to identify the critical nature of the relationship between development projects and malaria. Detailed investigation in each case might well take advantage of longitudinal micro GIS analysis of disease patterns to minimise and ameliorate any adverse impact of environmental changes on malaria transmission.

Data sources: Asian Development Bank 1999.



Figure 43.



Figure 44.



Figure 45.

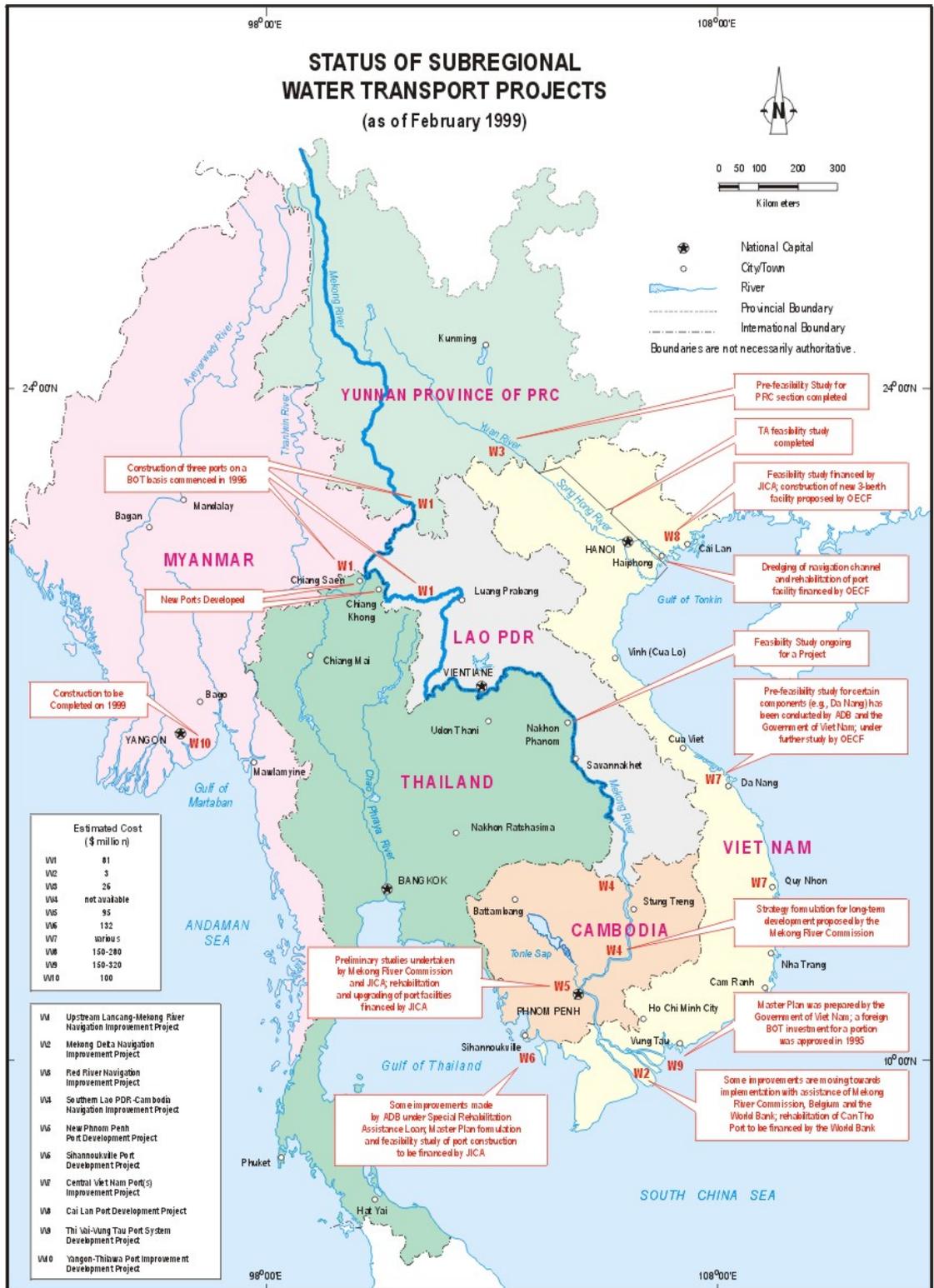


Figure 46.

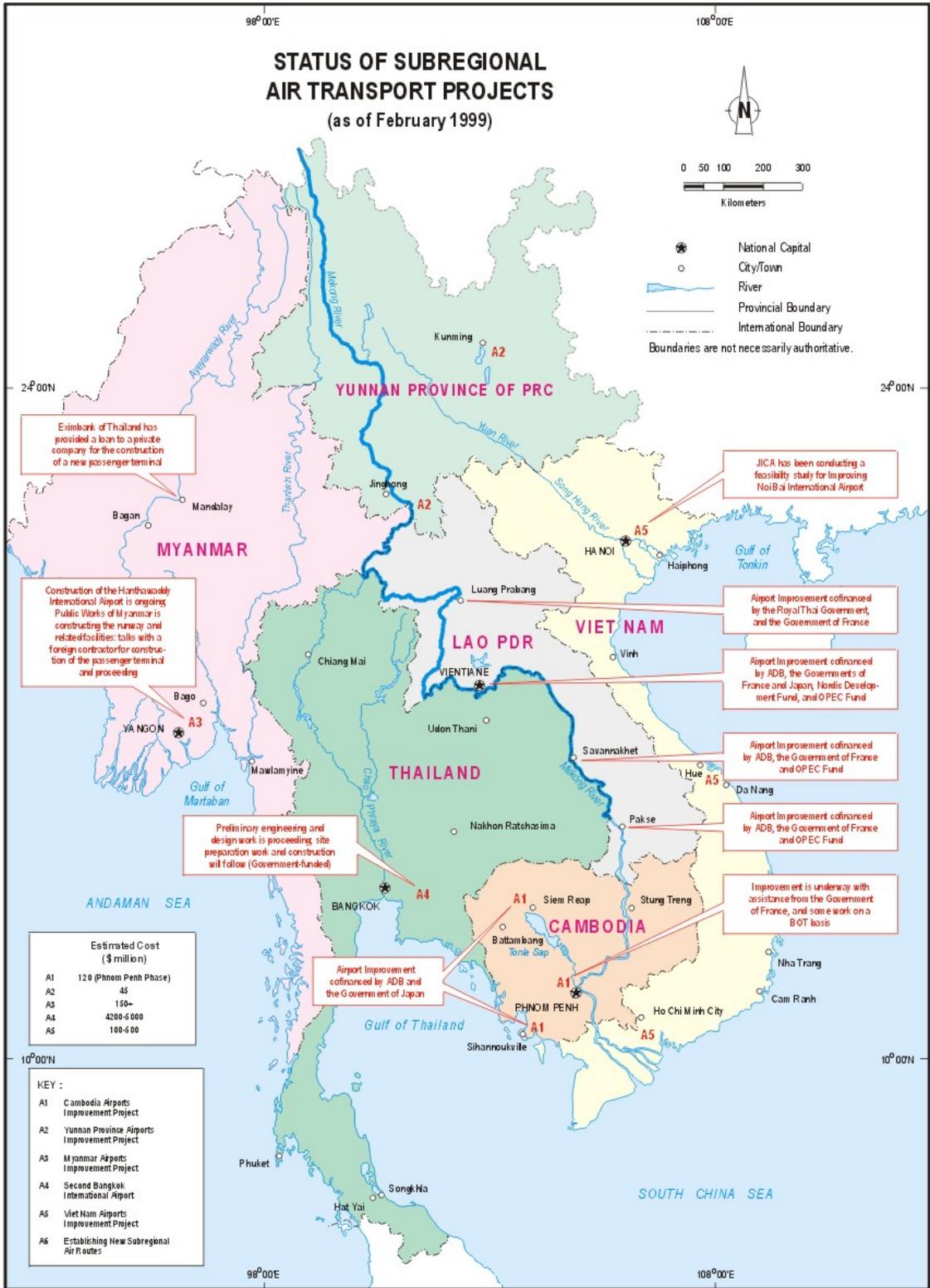


Figure 47.

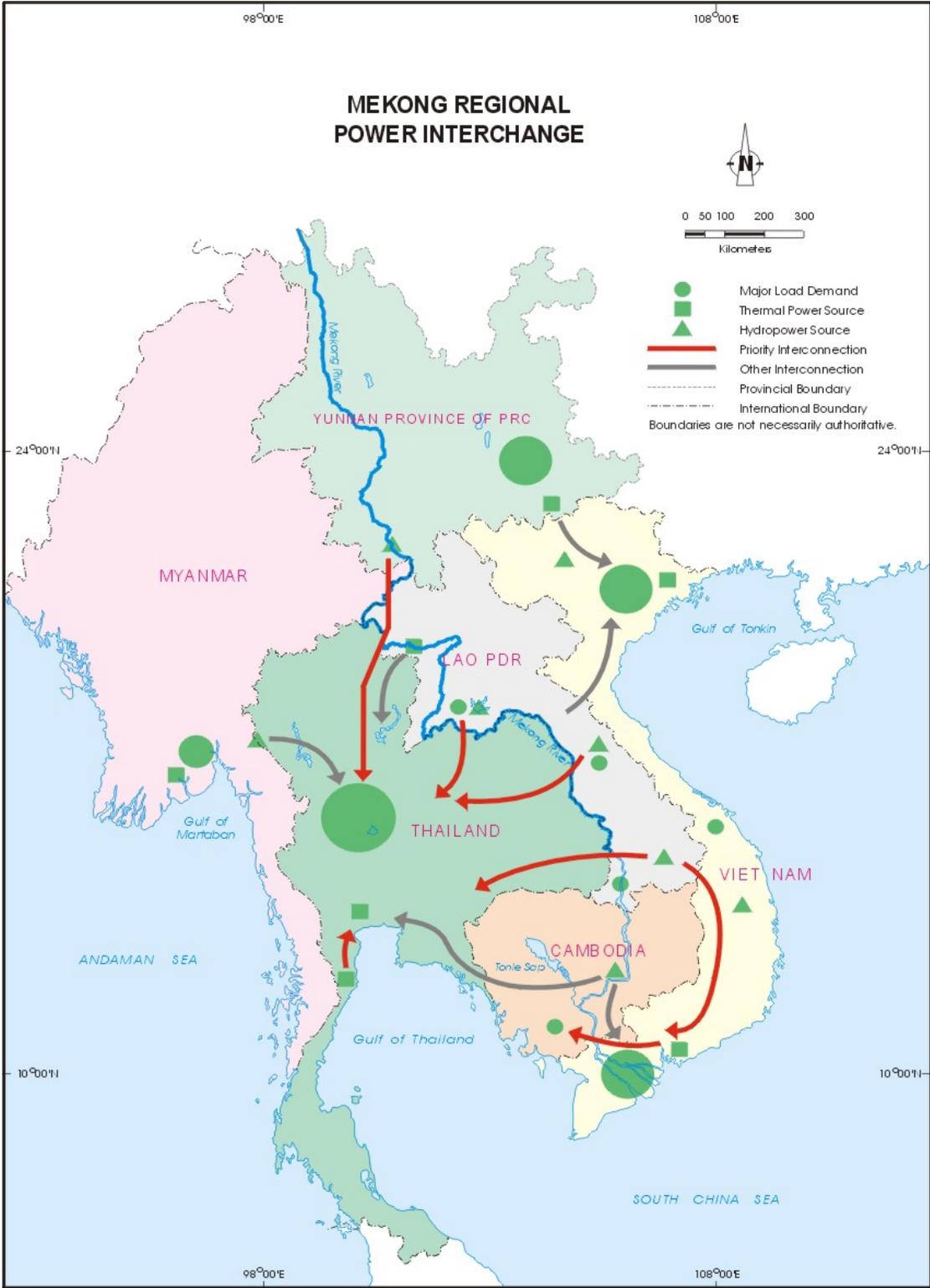


Figure 49.