

Part I

Health and Adaptation Approaches

From the lowlands of South America to the highlands of the Himalayas and to a global tour of case studies, this section reveals the underlying processes and the local realities associated with broad fertility, nutritional, and epidemiological transitions. The chapters discuss the short- and long-term impacts of national policies and development projects, regional transformations, environmental change, and, broadly speaking, the impacts of globalization on indigenous peoples in particular and human health in general. They illustrate the complementarity of cross-sectional and longitudinal approaches to the understanding of human adaptation and health and the use of different human-environment interaction theories to link local case studies to broader national and global patterns. As also illustrated in other parts of the book, cross-sectional approaches add value to comparative analysis, while longitudinal research reveals the processual nature of human-environment interactions and the consequences, both expected and unexpected, of different drivers of change.

Santos, Coimbra, and Welch open this part of the volume, demonstrating the interrelatedness of health and various ecological, political, economic, gender, and sociocultural transformations affecting indigenous populations at different temporal scales. In Chap. 2, they review in detail the long history of interaction between the Xavante indigenous peoples of Central Brazil and national society within which contemporary changes should be analyzed. They provide an overview of their studies of health transition among Xavante communities since 1990 by examining three dimensions in detail: demographic changes, oral health, and nutritional transition in the context of socioeconomic differentiation. The authors illustrate the way longitudinal research is complementing cross-sectional approaches to understand the consequences of change and implications for population health and community well-being. They examine the long-term relationship between health profiles and emergent forms of socioeconomic differentiation (such as those defining gender relations) internal to specific Xavante communities. The authors give particular attention to the importance of understanding these transitions in the context of local histories, including variability internal to Xavante communities. They do

so, however, by contextualizing these trends within broader patterns of health, demographic, and nutritional transitions in this and other parts of the world.

In Chap. 3, Childs, Goldstein, and Wangdui examine interactions between household-level reproductive decisions and available land resources, government policies, and new perceptions of family organization and the role of children on household economic strategies. Based on long-term research in three villages in Shigatse Prefecture of China's Tibet Autonomous Region, the authors integrate survey-based longitudinal demographic data gathered with in-depth interviews with household heads about factors affecting their decisions on family size. Two main theoretical orientations explaining connections between landholding and fertility are reviewed: the land-security and land-labor demand hypotheses. The authors emphasize the role of institutional factors mediating the relationship between landholding and fertility. The chapter provides a rich history of the region in five periods: "the old society," Tibet's commune systems, privatization and the family responsibility system, the implementation of fertility control, and the period of "replacement fertility." This section is followed by attention to the impact of China's birth control policy and the process by which it is contributing to the formation of different notions of family and images of modernity in rural Tibet. These discussions offer the background to examine trends in fertility decline as related to decreasing land per capita, state policies on birth control, and the changing roles that children play in households' long-term economic strategies. The authors highlight that while the connection between land and fertility is still important, it is becoming less relevant because of changes in economic conditions, including China's policy to promote rapid development in Tibet.

In Chap. 4, Muehlenbein takes a case study approach to reveal relationships between environmental and socioeconomic change contributing to emerging infectious diseases such as SARS, Nipah virus, Ebola, Malaria, and Lyme disease in different parts of the world. Muehlenbein places infectious diseases in historical context by discussing the different drivers affecting epidemiological transitions in different societies. Advances in sanitation and health care have shifted attention in some areas from infectious to chronic diseases. At the same time, major changes in population movement due to migration and various forms of tourism, climate change, urbanization, and land-cover change have contributed to the rapid evolution of new or more resistant infectious diseases. This overview provides a context to discuss different forms of human-wildlife interaction and their implications for infectious diseases. The chapter pays particular attention to the ways human actions may impact wildlife and in the process release pathogens previously buffered from human populations. Using data from various case studies, Muehlenbein examines three dimensions of human-wildlife interaction in detail. First, he examines the role of wildlife consumption, not only as food but also in other forms such as medicine. He then examines the complex ways land-use/cover change and climate change interact in affecting wildlife habitat and consequently may trigger the spread and rate of incidence of zoonotic diseases. Finally, Muehlenbein examines the expansion of primate-based ecotourism, including those promoting direct physical contact

between human and nonhuman primates. The chapter calls attention to the direct and indirect drivers affecting emerging infectious diseases at different scales, the potential future implications of these changes, and suggests possible mitigation pathways to minimize the vulnerability of human societies and wildlife.