

Key drivers and uncertainties

Rural-urban migration is driven by several factors: high fertility rates in many rural areas, for example, and limited employment opportunities, particularly from the marginalisation of small farmers. Urban areas offer better jobs and education opportunities. Urban growth is also driven by, among other things, the geographic concentration of investment, including foreign direct investment, and outsourcing from western economies.

A key uncertainty relates to the development of regional fertility rates. If decline does not continue as assumed, urban population growth may strongly exceed current projections. Policy developments, particularly on social welfare and health care, are a key uncertainty and are largely shaped by the prospects for economic growth. The development of domestic consumption also depends on several factors, such as how far economies will integrate economically, the impact of population ageing, and the capacity for strengthening private investment and education.

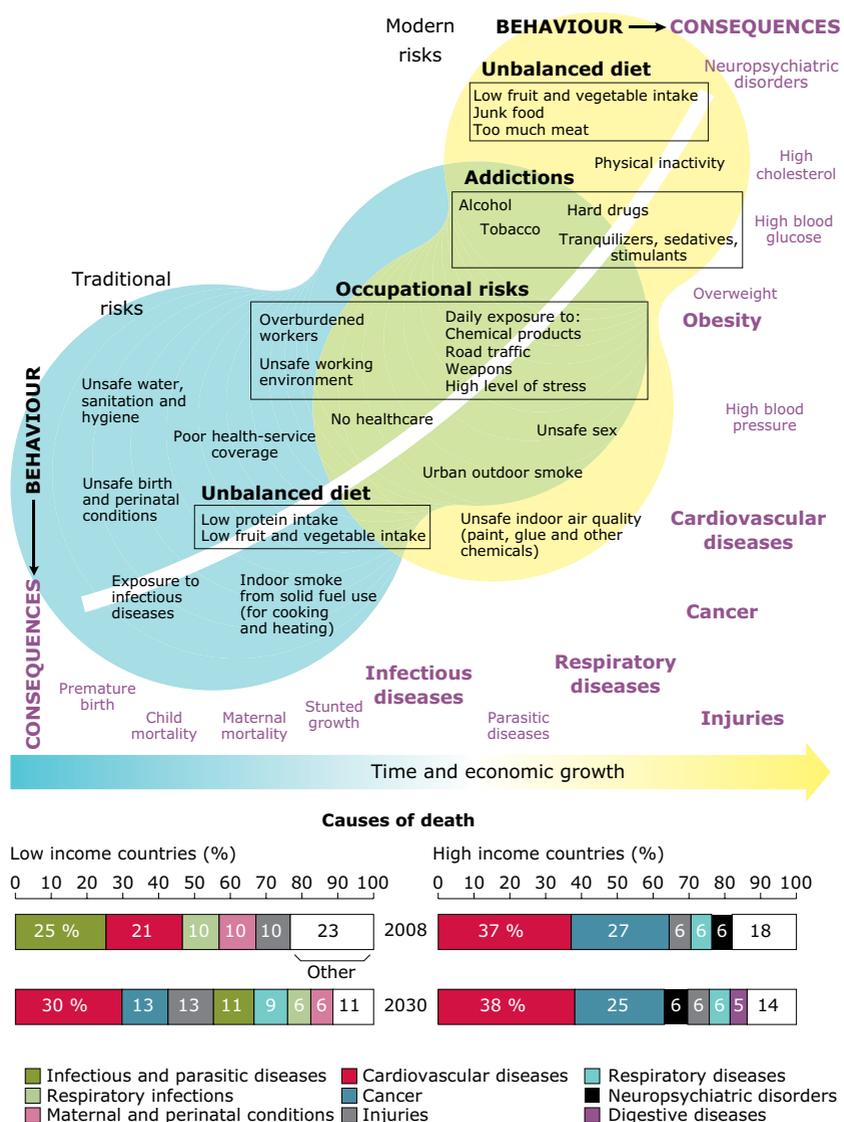
3 Disease burdens and the risk of new pandemics

The risk of exposure to new, emerging and re-emerging diseases, to accidents and new pandemics, grows with increasing mobility of people and goods, climate change and poverty. Vulnerable Europeans could be severely affected.

The disease burden in developed and developing countries differs markedly. Malnutrition and infectious diseases are dominant in the developing world, while obesity and many non-infectious diseases (cardiovascular and neuro-degenerative diseases, diabetes, respiratory diseases, cancer and mental health) predominate in the developed world (WHO, 2006). As countries develop, infectious diseases generally become a less significant part of overall ill health and are replaced by non-infectious diseases (Figure 3.1) often associated with lifestyle, consumption and ageing, and driven by increasing obesity and inactivity (WHO, 2009a).

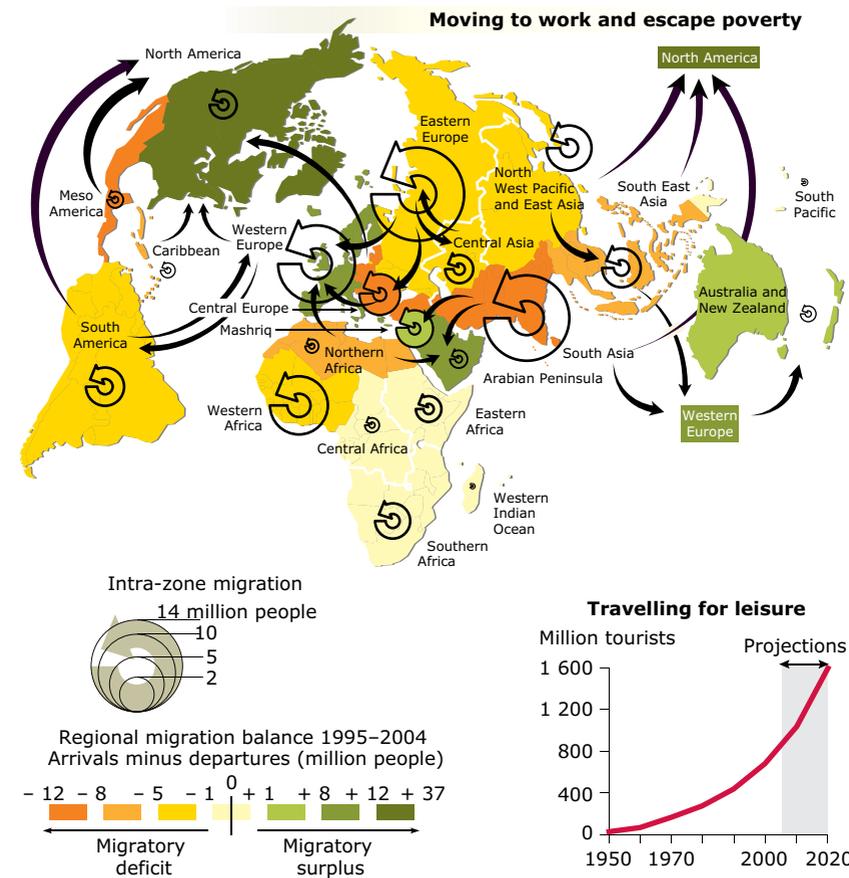
Changes in working, living and travel habits, as well as climate change, alter the disease burden both between and within countries (Arguin et al., 2009). Migration inside and between countries is likewise increasing (Map 3.1). These migrations increase the opportunity for diseases to spread rapidly between populations and may result in the re-introduction of infectious diseases to areas where they had been eradicated (or significantly reduced). They may also hasten the spread of pandemics. For example, tuberculosis has re-emerged and is becoming more common in some developed countries where it had been reduced to extreme lows. This increased incidence has been linked to migrants from areas of high health inequality (WHO, 2009b).

Figure 3.1 Evolution in human health risks as economies develop



Source: WHO, 2004.

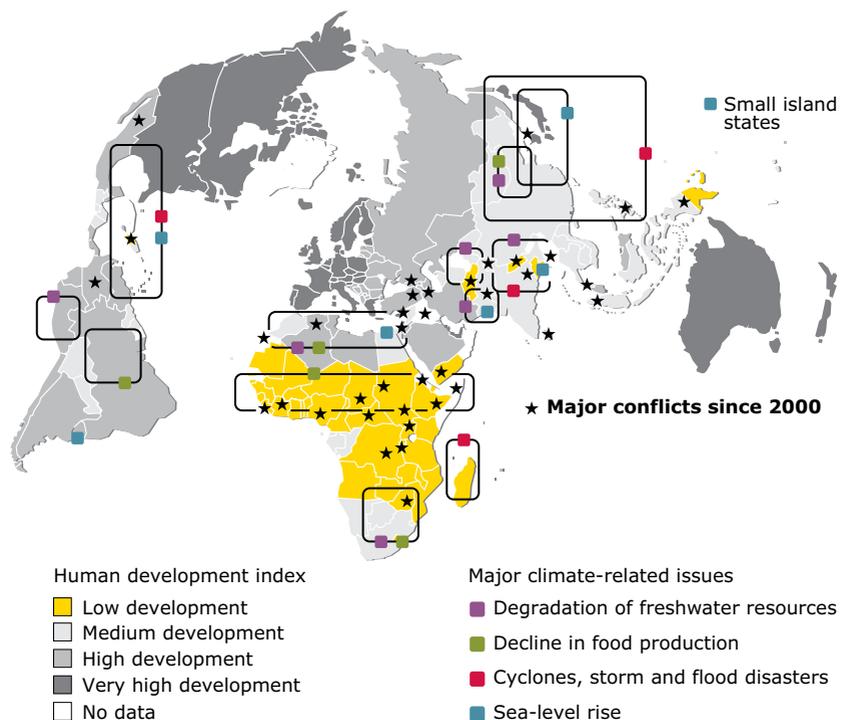
Map 3.1 Movements of people: migration and tourism



Source: DRC, 2007.

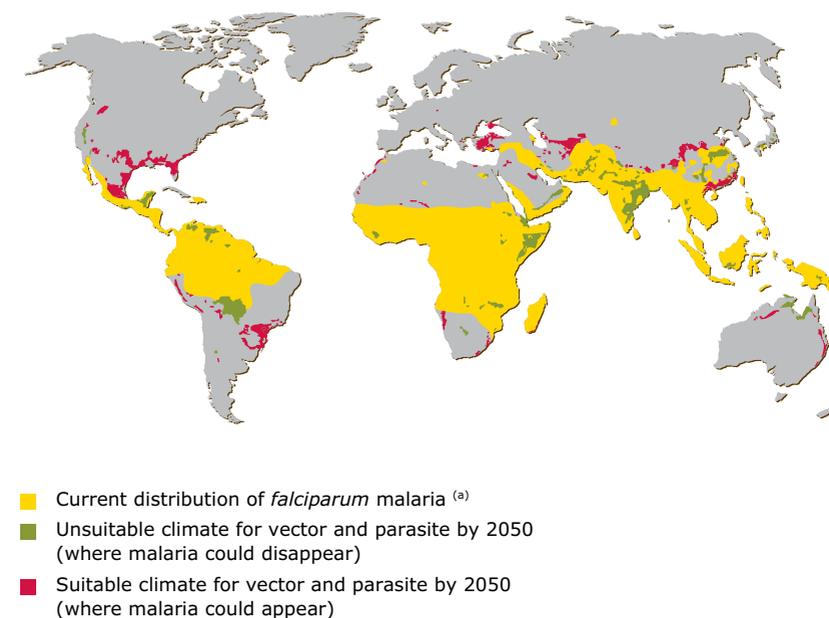
Source: UNWTO, 2008.

Map 3.2 Environmental factors and conflicts that may cause migration



Source: WBGU, 2007; UNDP, 2010; UNEP, 2009; IISS, 2010.

Map 3.3 Malaria by 2050



Notes: The projections are based on the HadCM2 high climate scenario. The areas of appearance and disappearance are about equal in area and number of inhabitants (about 400 million).

^(a) *Plasmodium falciparum* is a parasite that causes malaria in humans. It is transmitted by the anopheles mosquito. The current distribution represents the maximum extent of the distribution of the parasite and its vector.

Source: Rogers and Randolph, 2000; Ahlenius, 2005.

Migration inside countries (usually from rural to urban areas) increases the risk of infectious disease, violence and drug dependence, particularly where the migration leads to chaotic slum development, associated with poverty, overcrowding and poor public services. Densely populated urban areas, may pose an even bigger risk of environmental hazards, crime and disease, especially if they are not well managed (WHO, 2008b).

The effectiveness of efforts to manage migration and control disease is hard to predict, partly because of uncertainties in trends and future policies but also because the links between income levels and global pandemics are complex and poorly understood. Significant global disparities will persist in national capacities to manage some transmissible infectious diseases (WHO, 2009b). It is worth investing in prevention globally and at the place of origin of potential migrants to Europe.

Box 3.1 Why are risks of new pandemics important for Europe?

Health is essential for human development. Globally, health standards have improved in recent decades, largely in step with increasing lifespans. The disease burden is unevenly distributed across populations, however, varying with gender and social and economic status (Wilkinson and Pickett, 2006).

Global health megatrends are relevant for European policymaking, particularly by prompting investment in preparedness for increased immigration and the associated risks of emerging diseases and pandemics (Arguin et al., 2009). In addition, environmental changes worldwide are becoming an important driver of human health (Gilland, 2002).

Global health can have direct impact on Europe, such as the spread of new diseases through immigration or tourism. The risks of exposure to new, emerging and re-emerging diseases or to accidents and new pandemics increase with globalisation (via travel and trade), population dynamics (due to migration and ageing) and poverty. The risk of exposure can be exacerbated through environmental factors causing migrations, through forced migration, disease and conflicts (see Map 3.1).

The ageing European population is also more vulnerable to both communicable and non-communicable diseases and to health effects related to climate change (for example heat waves and flooding). For Europe, this increased vulnerability may impose significant costs on health systems, which can compete with costs on environmental protection.

Key drivers and uncertainties

Changes in disease burden patterns occur because of global developments such as economic growth, wealth and poverty distribution, increased migration and personal mobility, rapid urbanisation in developing countries and related governmental policies. Other factors include the ability of border security systems to prevent the spread of disease, consumption and dietary habits, access to sanitation and clean water, health care standards, environmental degradation and climate change impacts (WHO, 2008a).

Many of these drivers are affected by uncertainty. For example, how will developed countries invest in health enhancement to prevent the spread of diseases (WHO, 2004)? How will environmental regulation develop? What will be the impacts of climate change? There is also a high risk of unexpected events, for example pandemics and war (NIC, 2008).

The growth of resistance to antibiotics and other drugs, and the failure to address many tropical diseases (Frew et al., 2009), also give rise to concern in both developed and developing countries. However, technology can play an important role in supporting improvements in health status and in spatial monitoring of health patterns, allowing mapping and analyses of geographic patterns of disease trends that were previously overlooked (Bodenhimer, 2005).