

## Health, environment and development: issues in developing and transitional countries

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### Introduction

This paper focuses on a number of key issues that have emerged in the interaction between environment, development and health over the past decade. Many of the issues stem from the intricacies of the relationships of health with the physical and biological environments and the nature and scale of human activities. Many of these were spelled out in the 1992 report of the World Health Organization Commission on Health and Environment, *Our planet, our health* (WHO, 1992). However, the decade of the 1990s has witnessed a number of specific trends that have had yet further impacts on the interrelationships among environment, health and development and many have affected the very course of development itself. These include continued rapid urbanization, meagre success in addressing the problems of poverty, the transition of post-socialist economies, the effects of structural and economic adjustment policies, health sector reform and cost recovery. These have at times operated specifically within the health sector and, at other times, broader policies of economic restructuring have impacted on entire national and regional policies. Their effect has often been to restrict countries' public sector expenditure and their concomitant abilities to implement environmental improvements.

This paper confines itself in the main to health impact and outcomes of these phenomena although it should be stated at the outset that they are often difficult to disentangle from the wider impacts on development as a whole. In addition, this paper identifies the

contributions of others in this special issue in the complex field of health, environment and development.

It sets the context for the papers that follow in this collection. It is not, however, feasible to provide in a single paper a comprehensive overview of environment, health and development. Rather, the paper identifies a number of main issues and areas of concern. These include communicable and vector borne diseases; epidemiological transition including population ageing; and the nature of health and health care under conditions of social and economic transition.

### Key issues in the relations between environment, development and health

The classic conceptualisation of the interactions between environment and health involves a tripartite relationship between the physical environment and biological environment and the nature and scale of human activities (WHO, 1992). These three components interact and have effects on human health, sometimes positive and sometimes negative. This can, broadly speaking, be seen in three contexts: the negative effects of industrial development in the past, the removal of negative effects to other, often less developed countries by exporting waste or by transplanting polluting production processes, and the impact of development projects on human health (health impact assessment).

A key issue relates to the *scale* of the above environmental changes. Many health impacts related to the environment occur at a global or at least a regional

scale. However, people live and have their daily activities at a local scale. So what is crucial for well-being is what is happening in local environments. In this context, urbanization, poverty, service provision, disease profiles and the like become critical in the face of super-regional or even global environmental change. Consequently, it is crucial to view the local expression of environmental change in its wider global context and to see the interdependence which underlies locally unique situations. Health geography is well suited to conduct such research.

Another set of issues revolves around economic reform, economic and structural adjustment, health sector reform and the impacts on health and well-being. This is particularly important today in the context of the indebted countries many of which are in the poorer Third World, and those in transition, mainly former communist countries in Central and Eastern Europe. There is relatively little evidence of the *direct* impacts on health of these policies although the suspicion is that economic and structural reforms often impact on the poorest and most vulnerable groups in any society, who are most dependent on public sector expenditure and support. When economies are re-orientated to reduce such support and to emphasise the role of the market and free enterprise, there is great concern that social and spatial inequalities will be exacerbated. Even structural adjustment policies implemented 'with a human face' may fail to protect the most vulnerable from the effects of retrenchment.

Special attention must be paid to the relations between *urbanization*, urban and peri-urban growth, environmental change and impacts on health. These are all very closely bound up with population change and movements, and especially the socio-economic development of growing urban populations in developing countries (Harpham 1994; Harpham & Tanner 1995; Verhasselt 1997). A key factor in improving or disadvantaging health is seen as *poverty*, particularly in developing countries in which rapid urban growth has been accompanied by massive urban poverty (Drakakis-Smith 1996, 1997). The process of urbanization is widely regarded as one of the major global environmental changes directly affecting human health today, but the actual impacts of urban environment on health are complex and still relatively poorly understood (Stephens 1995; Verhasselt 1997). The problem is in part definitional, as definitions of the urban environment tend to be physical and exclude the complex social aspects of the process. Stephens (1995) calls for a real commitment to rethinking the management of cities to address health issues and multiple deprivation. This is echoed by many other authors, with regard to vulnerable people in particular in the urban environment,

such as children and their parents (Hardoy et al. 1992; Satterthwaite et al. 1996). Indeed, a new environmental agenda is needed for cities, which enhances the capacity of city authorities, NGOs, community organizations and others to identify and address their environmental problems. Without this approach, it is likely that the scale, complexity and ramifications of urban and developmental issues will remain intractable. However, expenditures and policies oriented to improving environmental and public health in many developing country cities are undoubtedly threatened by economic crises, structural adjustment and the sheer weight of human numbers in rapidly expanding cities.

### **Epidemiological transition and population ageing**

With increasing life expectancy in parts of the developing world, the classical WHO definition of health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' should be translated into a value estimate of quality of life and be broadened to include an indication of the so-called 'healthy life expectancy'.

With the increase of life expectancy, the phenomenon of growing proportions of the *elderly* population is no longer a 'privilege' confined to Western industrialised countries. Many developing countries, especially those in the rapidly industrialising middle-income group, are now experiencing a similar situation (Phillips 1994; Phillips & Verhasselt 1994; UN 1996). This is accentuated by the change of social structures consequent upon urbanization and economic development. It involves a trend towards the constitution of nuclear families in an urban environment, due in part to limited living space and especially to social preferences which move away from multi-generation households. In countries such as China, strong population policies such as the one-child policy, will exacerbate population ageing and changing family structures, even if helping to curb population growth (Bartlett & Phillips 1997). However in the countries of Central and Eastern Europe the environmental depletion of the past decades, the stress of the transitional stage and the breakdown of the existing system of public health interact, resulting in a decreasing life expectancy and probably an even stronger decrease of quality of life.

The epidemiological or health transition is now well advanced in many countries, especially amongst middle-income countries in the developing world, and the emergence of 'modern' morbidity and mortality profiles is clearly to be seen (Phillips 1994; Frenk et al. 1996). This means that chronic and degenerative diseases — heart disease, cancers and cerebrovascular

disease — are becoming major causes of death and disability. With demographic ageing also now clearly evident in many populations, the diseases and needs of elderly populations are coming to the fore. Indeed, WHO (1997) estimates that chronic diseases are responsible for more than 24 million deaths annually, almost half of the 52 million deaths. Global epidemics of cancers, heart disease and other chronic illnesses are forecast. In terms of development, it is important to recognise the needs for developing countries to provide resources for these conditions, and to train staff and other expertise for the future. At present, many countries, especially the poorer ones, are in a type of delayed transition, in which their populations — or sections of them — are at risk from both infectious and chronic conditions, a sort of double jeopardy. Until such time as environmental improvements, public health provision and poverty reduction enable these countries to progress beyond this stage of transition, resources will be needed for all types of disease and conditions, placing extra burdens on already strained countries.

### **Communicable and vector-borne diseases**

It is tempting to think that, as the epidemiological transition proceeds gradually towards its late stages in which chronic and degenerative diseases tend to predominate, there is no longer any significant threat to human health from infectious, parasitic and vector-borne diseases. Vast advances have been made in recent years in an understanding of the modes of transmission and the means of control of many of the previously highly feared life-threatening infectious diseases, such as tuberculosis, malaria, leprosy and diarrhoeal diseases. However, it is increasingly apparent that many populations, particularly the poor in developing countries, are still subject to these and numerous other infectious and parasitic diseases. These populations often also face the double jeopardy of the delayed epidemiological transition, subject not only to chronic diseases of modernisation but also to the infectious diseases, now relegated to a minor place in most developed countries, not to mention exposure to the perils of often largely unregulated industrialisation (Bobadilla et al. 1993; Phillips 1994; Lankinen et al. 1994; Harpham & Tanner 1995).

In most regions of the developed world, infectious and parasitic diseases account for under 5 per cent of all deaths. However, in many of the developing world countries, and increasingly in Central and Eastern Europe, it is not uncommon to see communicable diseases contributing a much higher percentage of deaths and certainly contributing substantially to loss

of disability-free life. There has been a marked realisation in recent years that the battle against infectious diseases is not over (Phillips & Verhasselt 1994; Lankinen et al. 1995). The World Health Report of 1996 focused on this issue and has some remarkable statements. Until a few years ago, there was optimism that the long struggle against infectious diseases was over; this cautious optimism may have turned into 'a fatal complacency' that is costing millions of lives every year. Indeed, the papers in this issue of *GeoJournal* illustrate that, in many countries and environments, communicable and infectious diseases are still very significant and even resurgent. Dengue, cholera, diarrhoeal diseases amongst children, and many other diseases are still rife. Antibiotic resistance, new strains of infections, new infections such as HIV/AIDS and a number of little-known but lethal threats now exist. Geographical mobility also means that diseases once spatially fairly restricted are now at times striking in regions once thought safe. 'The re-emergence of infectious diseases is a warning that progress achieved so far towards global security in health and prosperity may be wasted' (WHO 1996, p. 2).

It is surprising to many that the mosquito is, even at the end of the twentieth century, identified as 'public health enemy number one' (WHO 1996). WHO notes that it is the vector for many important diseases, including malaria, dengue and yellow fever. Together, these cause millions of deaths annually and hundreds of millions of cases. Malaria alone is estimated to have 300–500 million cases per annum, 90% in Africa, and between 1.5 and 2.7 million deaths. Amongst all infectious diseases, malaria continues to be one of the largest contributors to the burden of disease. Similarly, dengue is of increasing importance and is rapidly spreading in many areas, flourishing in areas of poor housing and environmental sanitation. It is the most important mosquito-borne viral disease. As many as 2,500 million people in all continents except Europe are at risk and there are an estimated 20 million cases annually. Different species of mosquito are involved in these diseases and some, such as those involved in the spread of lymphatic filariasis and Japanese encephalitis, have specific habitats and very particular environmental requirements. These render their control very complex, because it generally requires sustained efforts on the part of many participants; public health, public services and individuals. A key geographical feature is that mosquitoes are frequently extending their areas of influence over humans. Increased populations are exposed to them, both from international travel but especially from forest clearance and agricultural and settlement expansion, as well as irrigation and water schemes. The health impact assessment of such pro-

jects therefore gains huge relevance and has crucial geographical and public health implications (Birley 1995). Climate change may also be extending the areas in which mosquito and other vectors can survive, opening a whole new area of environmental epidemiology for spatial research (often combining epidemiological skills with knowledge of GIS).

A number of other infectious diseases are also on the increase and many are very intransigent. Tuberculosis, often associated with co-infection from HIV, has overwhelmed many control programmes, and not only in developing countries. Drug resistance and patient attitudes often make its treatment very difficult. Other infectious diseases can also be addressed with immunization programmes, including diphtheria, of which an outbreak spread in the early 1990s from Europe to the Western Pacific. Tragically, diseases such as leprosy still afflict a number of poorer countries although progress is being made towards its elimination with multidrug therapy. Polio eradication may be in sight and there has been a reduction in cases of about 85% since 1988; it has effectively been eliminated in a number of regions including the Americas, and very much reduced in most of Europe, although outbreaks in the Russian Federation have required focused attention. Other new or increasing infectious diseases such as some Sexually Transmitted Diseases (STDs) and HIV/AIDS do not, sadly, seem to hold out the hope of a vaccine or reliable, affordable, drug therapy in the near future. For the time being, their control seems to be dependent as much upon changes in social and sexual behaviour as on advances in medical science (Orubuloye et al. 1995; Awusabo-Asave et al. 1997).

Numerous other infectious diseases occur individually and in epidemics and many rely for their future control (their elimination being unlikely) on improved public and environmental hygiene and the reduction in poverty. These include diarrhoeal diseases, especially amongst children and infants, cholera and epidemic dysentery, as well as schistosomiasis. Virtually all are associated with poverty and/or poor environmental health. Food safety, in terms of preparation and storage, and water quality, has also become a high priority for many development agencies and the WHO.

### **Economic adjustment & health sector reform in developing countries: impacts on health and health care**

Many countries particularly in sub-Saharan Africa, Latin America and the Caribbean and increasingly in Asia, have over the past decade or so either sought or

had imposed on their economies by international agencies various forms of 'economic adjustment' involving stabilisation and structural adjustment programmes (Weil 1990; Asthana 1994; Messkoub 1992). The underlying reasoning is that the 'debt crisis' arose out of inefficient economies, unproductive bureaucracies and the lack of ability to cope and compete in international markets. The aim of economic adjustment policies is ultimately to reverse such perceived inadequacies and to improve economic performance. They are therefore intended to increase economic growth, address balance of payments problems and generally enable structural changes within national economies. These policies have generally required long and short term restructuring of economies and the expenditures therein. Principal features have been austerity measures, devaluation, redirecting expenditure from consumption and curtailed public expenditure. This has generally meant the reduction of support for major public sectors and activities such as education, health, welfare and food subsidies. Economic stabilisation programmes would often focus on the removal of short term budget deficits; structural adjustment policies (SAPs) aimed for economic and structural changes in the longer term and included belief in and reliance on trade liberalisation and privatisation. The focus has usually been on improving the productive sectors. The exponents of economic adjustment have tended to place reliance on the supposedly efficient operation of the free market and so-called neo-liberal economic policies, particularly the liberalisation of markets to promote export earnings.

However, as noted earlier, the effects of economic adjustment, particularly with its emphasis on retrenchment of public expenditure, may impact disproportionately on the poor and those most dependent on the public sector for employment and its services. Many have feared that austerity and SAP programmes will have deleterious effects on health, especially of the poor and vulnerable groups in developing countries (Starr 1994; Ugalde & Jackson 1995; Reed 1996). Expenditure on public health and infrastructure would be likely to be curtailed and nutrition would also suffer. Evidence is mixed as to the real impacts of SAPs, as some effects on health are longer term whilst others may be immediate. Evidence of impacts on health is generally indirect and requires sensitive monitoring. 'Adjustment with a human face' has been advocated by some development agencies to minimise the impacts of the measures on the most vulnerable groups among the poor, women, children and elderly people.

## Health and transition in Central and Eastern European countries

The fall of communism left many of the countries of Central and Eastern Europe with severe economic problems and an instable political situation. Their economies are in a process of transformation from socialist planned states to a western-type regulated market. State enterprises have been and still are being privatised. The construct of total employment collapsed with the end of state socialism and basic social security had to be reorganized, leaving vulnerable groups, such as women and unemployed older people, as well as some groups of former state employees, in a difficult situation.

Not only is the economy being transformed, but the whole fabric of society is affected. Control over the health care system is being decentralized and parts of health care privatized. Public health, a government responsibility, is easily neglected in such situations. Traditionally, most of the health care systems were relatively well-staffed, in reality over-staffed, but the mix of skills and specialisation is not that which is needed to solve the current problems facing the population (McKee 1991). These health care systems are now in a process of transformation towards social insurance based systems (Marrée & Groenewegen 1997). There is, however, a serious problem concerning the affordability of a broad social insurance system, covering most of the population and most of the health services. Many people and many employers will not currently be able or wish to pay the necessary contributions.

The legacy of environmental pollution (Yarnal 1996) and the economic recession and structural disorder which followed the end of the communist period in Eastern Europe and in the former Soviet Union, have most probably a serious negative effect on the health situation. Life expectancy among males decreased, resulting in an increased sex differential (WHO World Health Statistics Annual for 1996; Nanda et al. 1993; Philipov 1996). High rates of cardio-vascular diseases are often observed. Stress also leads to psycho-social disorders, unhealthy life styles, such as smoking and excessive alcohol consumption and increased suicidal behaviour, linked with daily difficulties and the uncertainty about the future. As in the former USSR, environmental conditions have deteriorated with deleterious effects on public health (Malkhazova et al. 1997). Pollution rates in these countries are the highest in Europe. In these circumstances, a reliable and smooth working public health system is all the more necessary. Health targets need to be adapted to new threats, taking account of the new situation created by emerging and re-emerging diseases and by the changing health

situation and changing health status in the transitional countries.

## Conclusion

A major issue in both developing and transitional countries is that of sustainable health. Health can to an extent be regarded as an individual right but, at the macro level, it can also be considered an output of efficiently managed development.

Sustainability in health is based upon several components such as food security, political stability, environmental control and equal accessibility to good health care. Generally, this involves economic growth, low fertility rates and broad development across a range of sectors, including agriculture, industry, education, housing and welfare. The burgeoning burden of poverty may in the short and longer term be affected by economic policies such as economic and structural adjustment.

Countries all over the world have been implementing 'health sector reform', often involving reduced direct public expenditure, public-private sector partnerships, focusing of resources and the like (World Bank 1993; Berman 1995). The idea of reform is to increase efficiency, equity and effectiveness in the health sector and health, which on the face of it appears a very reasonable objective. However, there is considerable debate as to how far reform in any country has actually had effects on health. There is little doubt that economic crises, epidemiological and demographic transitions, dramatic political transformations (in Eastern Europe, China, Vietnam and Latin America) have often demanded some reform or redirection of the health sector (Zwi & Mills 1995; Cassels 1995). The debate often focuses on the nature, speed and impacts of reform. Cost effectiveness, quality and equity all need to be considered and discussed. This is by no means only a developing country issue and, indeed, health sector reform is currently more marked in many developed and transitional countries. From a geographical perspective, given its economic as well as service-oriented imperative, health sector reform has the potential of exacerbating geographical inequalities. Hard-to-reach places and difficult to service communities could suffer, especially as their health care costs will be relatively higher than elsewhere. Existing imbalances in provision of and access to good quality health care could be worsened if a focus is on efficiency and cost effectiveness, to the exclusion of equity considerations. Collection of evidence of the impacts of health sector reform on actual health is at an early stage. However, the implications for the design and implementation of pack-

ages of essential health services and the importance of burden of disease assessment for estimating health need in the context of health system reform are beginning to become apparent (Bobadilla & Cowley 1995; Lozano et al. 1995).

The health systems which in many countries should offer protection against disease have, as WHO warns, in extreme cases, either collapsed or have not even been built. Health sector reform may increase efficiency in some systems; however, elsewhere, the health sector is suffering from vicissitudes of underinvestment, neglect or privatisation, which may undervalue public health and exclude the most needy. Evidence of these changes in economies undergoing rapid transition is provided in a number of papers in this volume, drawing on evidence from countries as diverse as Romania, Cambodia and Argentina.

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