World Health and International Economic Sharing

Written by Mohammed Mesbahi

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Introduction

The World Health Organisation produces a report every year on the health of the world population, based on statistics compiled from the 193 member states that form the United Nations. The latest report shows that, in the developing world, life expectancy is shorter than in OECD countries, women are more prone to die in childbirth and babies are more likely to die before the age of five.

The report illustrates that global inequalities in healthcare are much greater than they were 30 years ago. While people in the West can expect to live until their late 70s, people living in poor countries, such as Burkina Faso or Chad, are unlikely to live beyond 46 or 47 years of age. In Africa, half the population lives on less than US$1.25 a day with little or no access to safe water. According to the UN, 12 million people die of preventable diseases every year, often caused by water-born parasitic diseases like

dysentery, insect-born parasitic diseases such as malaria, or from other factors related to wider economic and social problems such as malnutrition and lack of medical care.

Poverty Leads to Poor Health

Rather than climatic conditions or complex epidemiology, specialists note that the major causes of ill health for people in developing countries relate to poverty and underlying political and social conditions. This direct causal link between poverty and ill health has long been recognised by many civil society organisations that highlight poverty as the "biggest epidemic" facing the global health community, thereby emphasising the importance of economic policy as a health issue.

According to the most recent World Bank development indicators, 1.4 billion people were living on less than US$1.25 a day in 2005. A further 2.5 billion people were living on less than US$2 dollars a day, meaning that at least 45 percent of the world's population exist in a state of absolute or relative poverty, including half of the world's children. In contrast, the world's 497 billionaires (approximately 0.000008% of the world's population) have an estimated wealth of US$3.5 trillion (over 7 percent of world GDP).

The WHO's Commission on Social Determinants of Health has also recently acknowledged that the high burden of illness responsible for premature loss of life arises in large part because of the poor and unequal conditions in which people live and work. The appalling living environment for millions of people is, in turn, the consequence of deeper structural conditions - what the Commission calls the ‘structural drivers' of global health inequality.

The promotion of social and economic equity, which the WHO and many civil society organisations maintain is central to respecting human rights obligations in health, therefore depends upon "narrowing the gap" between the worst off and best off over time. This process involves "a progressive flattening of the health gradient", says the WHO Commission, by improving the health of all social groups to a level closer to that of the most advantaged. Put simply, the unacceptable discrepancy in living standards between the developed and developing countries, with almost half the world - some 2.5 billion people - living on less than US$2 a day, is a fundamental factor in the global crisis of ill health.

Access to Basic Medical Care

But why does poverty mean that people are more likely to suffer from ill health or serious illness? In simple terms, poverty often means people lack access to medical services. Even where healthcare is available, poor people cannot afford to pay for it or it is prohibitively expensive. As the World Health Statistics 2009 reveal, people in the poorest countries paid 85 percent ‘out of pocket' for their healthcare costs in 2006. More than 60 percent of medication in low-income countries is only available through the private sector, where the cost is more than six times the international market price. The poorest people suffering from the worst health outcomes due to poverty, in other words, are forced to pay the highest proportionate costs for healthcare.

Access to Clean Water

The lack of access to clean water and sanitation is also part of a state of poverty that has both direct and indirect health consequences for the poor. An estimated 2.6 billion people - about 40 percent of humanity - lack adequate sanitation, and over 1 billion lack access to adequate water sources. Consequently, 5,000 children die each day because of a lack of safe, clean water. For millions of others, the daily grind of searching for and collecting water remains an aspect of poverty that transcends the notion of 'basic' needs. In northern Ghana, for example, girls can spend up to five hours a day fetching water, whereas women may have to wait for hours at a standpipe in a city each day.

Medically, the ingestion of contaminated water can lead to a variety of preventable illnesses, such as cholera, typhoid and dysentery. There were 131,943 cases of cholera infection alone in 2005, resulting in the death of 2,272 people across 52 countries - most of them in Africa. Once the cause of death for thousands in Europe during the nineteenth century before its spread was understood, the disease has since been eliminated from most Western countries.

Cholera, like most waterborne diseases, is completely preventable and could be eliminated through the provision of clean water and adequate sanitation. According to the WHO, however, it is spreading again in many developing countries, especially across South America and Africa. Aid agencies estimate that the return of Cholera to Zimbabwe during 2008 killed 4,000 people and inflected close to 100,000 others.

Access to Education and Knowledge

Over one billion people, the majority of them women, lack the basic education needed to understand the causes of ill health and take appropriate preventive action. As widely recognised by UN agencies including the WHO, World Bank, UNAIDS and UNESCO, education dramatically affects health outcomes. With better knowledge about HIV/AIDS, for example, many individuals can be directed towards safe sexual behaviour and reduced HIV infection rates.

Educated women are more likely to use health services and health-related information, with a particular impact on child and maternal mortality rates. According to UNICEF, each extra year in maternal education in low-income countries reduces under-five child mortality by up to 10 percent. By enabling more secure employment and better access to economic assets, education also improves health outcomes in providing some protection from such shocks as ill health, disability or natural disasters.

The current distribution of education, however, is heavily skewed against girls, those people living in rural areas and the poor. Despite the pledge of signatories of the Millennium Development Goals to achieve universal primary education by 2015, children still have to pay for primary schooling (through either user fees or other charges) in 92 countries.

Such discrepancies in education can also be seen in the control of medical knowledge. Health specialists in the North know how to control most of the infectious diseases that afflict low-income countries. Rich nations should be sharing this knowledge and helping

with the alleviation of preventable diseases by ensuring that public health and sanitation be provided for all, together with clean water, adequate housing, education, adequate food and health education. These measures would go a long way towards the elimination of diseases that currently afflict people in developing countries, just as they were successful in improving the health of European and American citizens in the nineteenth century.

Structural Causes of Poverty and Ill Health

It is clear that the crisis of global health is intimately related to the crisis of global poverty. However, whilst the direct causes of ill health in the developing world can be attributed to a lack of resources and poverty, if we delve deeper, we can state that a major source of poverty itself is the current structure of the global economic system. This understanding - that improving global health is impossible without addressing the wider political and economic causes of poverty - is central to an agenda for human development and social justice.

Debt and Structural Adjustment

Structural adjustment policies and high levels of debt owed by Southern countries to institutions in the North remain a key reason for worsening health outcomes in many developing countries. Following the oil crisis in the 1970s, Southern debt suddenly soared due to interest rate hikes and the devaluation of the US dollar. Many economies in the 1980s, collapsing under an unmanageable debt burden, were forced to enter into loan agreements with institutions such as the International Monetary Fund (IMF) and the World Bank.

These loans were contingent upon the adoption of fiscal austerity measures and economic reforms, later commonly known as ‘structural adjustment programs' (SAPS). Under the rationale of attracting foreign investment through market liberalisation and downsizing the public sector, adjustment measures included the rapid privatisation of state industries, the removal of ‘barriers to trade' such as tariffs and quotas, and often led to social spending cuts in essential services such as education, health, housing, water and sanitation.

The human impact of structural adjustment has since become legendary; real wages fell by as much as 70 percent in some African countries in the 1980s, while the introduction of user fees for healthcare led to a catastrophic drop in usage of health services. Poverty and hunger rates considerably worsened in many indebted nations, health systems collapsed, children left school, and government-provided social services and safety nets were seriously undermined.

Structural adjustment also did little to curb the Southern debt crisis, which spiralled upwards by 400 percent to reach a level of US$3,000bn by the late 1990s. The devastating human consequences of SAPs have since led to their abandonment, although their replacement with Poverty Reduction Strategy Papers (PRSPs) in 1999 has resulted in policies little different from SAPs. Even today, the IMF promotes an

expansion of private-sector healthcare delivery in poor countries, with the same market-led approach to development leaving little scope for ambitious public health programs.

Unfair Trade Rules

Unfair trade rules also negatively influence health outcomes in poorer countries by exacerbating conditions of poverty and food insecurity. The World Trade Organisation (WTO) members meet to set the rules of world trade, almost always in favour of the rich countries, to the detriment of the poor. Whilst more economically powerful countries continue to subsidize their agro-export corporate farmers, the same countries insist that developing nations reduce their own subsidies and lower tariffs and quotas on the import of foreign goods.

Similar to the requirements of market liberalisation under structural adjustment policies, the WTO's Agreement on Agriculture commits member countries to remove tariffs and subsidies for farmers and food exporters. The current terms of trade, however, remain grossly unjust. While Southern countries are expected to do away with agricultural subsidies, remove trade barriers and open their markets to foreign goods, farmers in the North continue to be supported by huge government handouts. In 2005, for example, the US subsidised its agricultural products to the tune of US$19bn. These heavily subsidized products flooded the Asian rice markets, the African cotton markets and the Latin American soya markets, undermining local markets, and driving millions of Third World farmers and peasants into bankruptcy. As India's Trade Minister said at the Doha world trade talks in 2005; "Indian farmers can compete with US farmers but not with the US Treasury."

A major consequence of massive subsidies in the North is the overproduction of agricultural commodities, leading to the ‘dumping' of food at below production costs in developing countries. Subsidies in the United States, for example, have allowed US businesses to sell wheat on international markets at 43 percent below the cost of production, rice by 35 percent and cotton by over 60 percent. The effect of such dumping on farmers in the South can be devastating; not only are millions of smallholder farmers displaced from their livelihoods, but billions of dollars are lost each year in agricultural income for developing countries.

Agricultural and rural investment has also dramatically declined in poor countries over recent decades. According to the World Bank, agricultural productivity per worker has fallen by about 12 percent in Africa since the early 1980s, while yields of the most important staple food grains have not increased over the same period - a situation repeated across the developing world. Following the liberalisation of the agricultural sector, these factors have led to a collapse in rural employment and farm incomes in many poorer countries.

Increasing imbalances in the division of land ownership are a further obstacle to economic development in the South. In poor countries, a small number of large landowners possess most of the arable land, while vast numbers of small owners and tenants farm the remaining soils, which is often of inferior quality or on marginal lands where environmental degradation threatens agricultural production. Fewer and fewer households are able to subsist on herding, forestry or fishing. Commercial fishing

reduces the catches of poor fishers, and foresters lose their rights to logging companies working under government concessions. The globalised food system has therefore created a perverse and paradoxical dynamic; the use of land for export production may reduce food costs in countries with advanced economies, but it can have tragic consequences for most of the families who live from farming in the developing world.

Global trading rules are also biased in favour of large agro-industrial businesses that grow crops for export, thereby penalising small farmers who grow food for local consumption. The average land holding per head among rural farmers in developing countries declined from 3.6 hectares in 1972, to 0.26 hectares in 1992 - and continues to fall. Unfavourable market conditions can also cause these families to fall into debt, forcing them to sell their land and migrate to urban areas. Estimates by the UN in 2000 suggested that up to 30 million people had been driven from rural areas as a result of agricultural liberalisation policies.

With a vast number of hungry people living in farm households, these structural conditions are a major cause of food insecurity and increasing poverty - leading to the social and environmental settings that are a major cause of ill health. WTO rules and free trade agreements encourage governments to prioritise trade concerns and business needs over public health needs and social spending, in effect trumping the right to health with the priorities of ‘export-led growth', positive terms of trade and the shareholders right to maximise profit.

The Power of Transnational Corporations

The process of economic globalisation has led to the concentration of power in the hands of a small number of transnational corporations, resulting in the accumulation of huge profits in the midst of chronic food insecurity and poverty for millions of people. As markets were liberalised and the role of governments scaled back over the past few decades, private property rights were strengthened through trade agreements, in particular the Trade-Related Aspects of Intellectual Property Rights (TRIPS). Simultaneously, regional and bilateral trade agreements - signed at a rate of 15 per year in the 1990s - handed more power to large corporations, resulting in dramatically increased volumes of world trade.

The rapid growth of foreign direct investment (FDI) since the early 1990s, generally involving a company from one country making a physical investment into building a factory in another country, has also led to the immense influence of transnational corporations (TNCs). This trend is most notable in the food industry where large corporations dominate the whole supply chain, from the seeds planted in fields through to the production, processing, manufacture, marketing and selling of food to consumers. By 1990, for example, companies from OECD countries controlled 90 percent of the global seed market. Between 1990 and 2001, the foreign sales of the world's largest food-related TNCs rose from US$88.8bn to US$234bn, with total foreign assets rising from US$34bn to a spectacular US$257bn.

The result is a global trading regime subjugated to control by Northern-based TNCs, and a so-called ‘race to the bottom' for workers in developing countries. The liberalisation of capital and trade markets has made it easier for TNCs to operate

wherever the conditions are best suited to maximising the return on investments, allowing them to quickly move into countries with cheaper labour or more natural resources to exploit. Entire operations are often transferred into low wage and low tax countries with less environmental or labour protections, or ‘special economic zones' (SEZs) are set up in poorer countries that allow TNCs to operate with exemptions from certain taxes and business regulations. In 2004, 5,000 SEZs worldwide employed around 50 million workers. For many jobseekers in the South, poverty and unemployment force them to accept unhealthy working conditions and insufficient wages, in turn exacerbating the social determinants that lead to ill health. The employment trend in Northern countries is also towards downsized workforces, casual contract labour with less social protection, and increased job insecurity.

The privatisation of health and other essential services, which has gone hand in hand with the neoliberal ideology that still defines the macro-economic system, has also increased the power of transnational corporations based in the North. In most developing countries, market-driven health sector reforms intensified in the late 1990s under policies dubbed the ‘Washington Consensus' (led by the World Bank, IMF, WTO and United States), based on the assumption that government-run services were uneconomical and inefficient. Health insurance schemes flourished alongside a mix of public and private options for healthcare, often producing a two-tiered health system in low- and middle-income countries as a result of packages designed by the World Bank - meaning one for the rich who could afford choice, and a deficient version for the poor.

The effect for those who could not afford user fees or the Bank's ‘best buy' health interventions was often disastrous. In sub-Saharan Africa, primary education levels fell by as much as half between the 1960s and the 1990s, while many diseases of poverty once thought ‘conquered' made a sudden return such as tuberculosis and dengue fever. The public sector, far from being supported by unregulated privatised health services, was increasingly eroded. And the international trend towards a privatised world has effectively redefined the concept of health from an inalienable human right, to a commodity to be bought and sold on the market. Even in the traditionally welfare states of Europe, hard-won gains of publicly accountable services are being gradually eroded by a market-driven health sector.

This strong intellectual property regime, pushed by the US, EU and Japan at the WTO on behalf of their pharmaceutical companies, has also limited access to medicine for the poorest in the developing world. Under TRIPS agreements, governments grant patents to give a company monopoly power to manufacture and sell a medicine free of competition from any other manufacturer in that particular country, usually for a period of ten years. Such an imposed monopoly significantly increases the price of essential drugs, such as antiretroviral medicine for HIV/AIDS, as well as legally restricts the ability to produce ‘copy-cat' drugs that provide a lifeline for many of the world's poor.

Furthermore, the intellectual property regime and the vast profits that can be secured from patented drugs has skewed the incentives for research and development of drugs away from the needs of the poor in the developing world towards ‘lifestyle medicines' that service the desires of the richer members of society.

An unfettered global economic market that disproportionately empowers large corporations, increases wealth inequality both within and between nations, and fails to eradicate poverty and food insecurity is clearly incompatible with public health objectives. The globalised market system has not worked for the poorest people who lack the resources to fulfil the human right to "a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services". Only a new model for development can meet this vision as enshrined in Article 25 of the Universal Declaration of Human Rights, based on a rehabilitation of the public sector and public services, a reinvigorated notion of the government role in providing essential public services, and a transformed economic system that specifically prioritises health and social welfare.

The Need to Implement the Principle of Sharing

In 1978, the World Health Organisation held an international conference at Alma Ata in Kazakhstan to discuss the importance of Primary Health Care. Out of this conference came the Alma Ata Declaration signed by 134 countries, which stated that Primary Health Care (PHC), rather than expensive high-tech medical interventions, could provide the solution to the problems of world health. The radical concept of PHC went entirely beyond traditional healthcare delivery models to incorporate a spirit of social justice and universal equality, as embodied in the slogan ‘health for all by the year 2000'. Health is "not merely the absence of disease or infirmity", stated the Declaration, but a "fundamental human right" and a "world-wide social goal whose realisation requires the action of many other social and economic sectors in addition to the health sector".

The Alma Ata Declaration also embraced the proposals for a new international economic order, put forward by the United Nations in the 1970s, to reform the global economy to promote equality for Third World countries as well as replace the Bretton Woods system. The aim of ‘health for all' therefore had explicitly political implications based on "sustained economic and social development" in order to reduce the gap between the health status of the developing and developed countries. For the first time, two complementary understandings of healthcare were forged together; both the clinical determinants of health, as well as the social, political and economic determinants of health that are largely beyond the control of health ministries. Most importantly, PHC as the declared model for global health policy called for a more equitable distribution of resources between rich and poor - in other words, a fairer sharing of wealth and power that would soon become anathema to the advocates of neoliberal policies.

The idealism of equality and sharing that brought the world together in Alma Ata obviously did not last for long, almost immediately replaced by the World Bank's focus on ‘selective primary health care' that had the less ambitious goal of fighting specific diseases based on ‘cost-effective' medical interventions. This approach, characterised by a disease-focused and vertical model that only targeted a limited range of illnesses and health needs, ignored the broader context of development and the principles of social justice and equity. The lofty goals set at Alma Ata were soon overshadowed by the structural adjustment programs led by the International Monetary Fund and World

Bank, which incorporated competition into the provision of social services and led to the slashing of health budgets in many poor countries.

The World Health Organisation, that previously pioneered the concept of PHC in the 1970s, also remained conspicuously silent during the years of market-driven health sector reforms. A UN report summed up the state of health in 2003 in calling for a re-examination of current strategies to meet targets on reducing poverty, hunger and illness: 54 countries had become poorer than they were in 1990, it reported, and life expectancy had regressed in 34 countries, mostly in Africa.

Yet the spirit and vision of Alma Ata was never entirely forgotten. In 2000, when governments were originally scheduled to meet the goal of "the attainment by all peoples of the world... of a level of health that will permit them to lead a socially and economically productive life", a civil society gathering called the People's Health Assembly took place in Bangladesh and called for a renewed international commitment to primary health care.

The People's Charter for Health that was formulated and endorsed at the five-day gathering soon became the common tool of a worldwide citizen's movement committed to making the Alma-Ata dream a reality. On the thirtieth anniversary of the Declaration of Alma-Ata in 2008, the People's Health Movement again reiterated its call for ‘Health for All Now!', while the Ouagadougou Declaration on Primary Health Care was issued in Africa in April 2008, also calling for a renewal of the Principles of Primary Health Care and its implementation in developing countries by the international community.

A further impetus was given to the concept of PHC by the publication of three prominent reports in 2008; the WHO's World Health Report 2008 (titled: ‘Primary Health Care: Now More Than Ever'), the WHO's Commission on the Social Determinants of Health (CSDH) (titled ‘Closing the Gap in a Generation'), and the Global Health Watch II (written by a collective of civil society and health professionals that analyse the structural causes of ill health).

Of these, the previously mentioned CSDH report is of particular note. Although media coverage of the report was minimal, some health policy analysts described the findings as little short of revolutionary. The Commission - set up in 2005 by the WHO to address the social factors leading to ill health - stated that "deep inequities in the distribution of power and economic arrangements, globally, are of key relevance to health equity." In an entire section headed "Tackle the Inequitable Distribution of Power, Money, and Resources", the final report identified these factors as the key "structural drivers of the conditions of daily life". The fact that a majority of people in the world do not enjoy the good health that is biologically possible, it states, is by no means inevitable but the result of a "toxic combination of bad policies, economics, and politics". A fairer sharing of world resources is thus, in no uncertain terms, taken as the starting point for addressing inequities in health as well as all other aspects of human development.

In a stinging critique of globalisation, trade liberalisation, market integration, and multilateral organisations such as the IMF, World Bank and WTO, the CSDH report goes a long way towards defining a new international economic order - despite specifically stating that such a task was beyond its remit. Significantly, the report in its

final chapter recognises that its ambitious agenda is dependent upon a "global movement for change", involving not only the World Health Organisation, global leaders and country partners, but also civil society as "powerful protagonists in the global health equity agenda."

While the issue of healthcare again grabs news headlines with the national reforms proposed by President Barack Obama in the United States, demand for a renewal of primary health care based on equality is silently gaining renewed attention amongst policymakers. For the WHO to fulfil its mandate and live up to the bold analysis in its CSDH report, civil society organisations must play a central role in pushing through a policy platform based on the principles of PHC. The next step, as the People's Health Movement has long recognised through its global campaign on the Right to Health, is for popular public support to mobilise attention around the issue of 'health for all' - recognising the central role of the state and public health systems, and the ultimate responsibility of the United Nations in holding governments to account for universal human rights norms. When the principle of sharing is accepted as fundamental to the provision of adequate food, shelter, health care and education, then the fine words of the UN's many declarations can finally be translated into a concrete programme of action.

ANNEX

Diseases in the Developing World

Many of the diseases in the developing world should be entirely preventable with modern medical knowledge and an understanding of the structural causes of poverty.

The examples below illustrate some of the diseases that commonly afflict the developing world, and how a fairer sharing of world resources could help to alleviate them.

Bilharzia and Hookworms

Two billion people worldwide suffer from Bilharzia (schistomiasis) and soil-transmitted parasitic worms, mainly hookworms. Over the past few decades, incidents of schistosomiasis and hookworm have increased and continue to spread, especially in African countries such as Ghana, Senegal, Ethiopia and Mali. Estimates suggest that Bilharzia and soil-transmitted parasitic worms account for more than 40 percent of all tropical diseases, excluding malaria.

A fluke or schistosome parasite causes Bilharzia or Schistosomiasis, which spends part of its life cycle in a water snail and develops in humans. Infected people and their livestock, urinating in water where snails are not yet infected often spread the disease to new areas. Several scientists, including Brinkmann, have found a high incidence of schistosomiasis in areas near imposed infrastructure projects such as artificial lakes and irrigation projects.

Strong government intervention can play a critical role in addressing these diseases. For example, the Chinese government managed to reduce the number of people infected in its country from 12 to 1.3 million, through an integrated control programme involving the ministries of Public Health, Agriculture and Water Conservancy. The

Chinese authorities also realised the importance of health education in the control of the spread of the disease, so health agencies taught local populations how to prevent its transmission, how to treat it and the importance of cooperation with medical workers for diagnostic screening and treatment. Local people provided the labour, money and material for snail control.

Improved water supply and sanitation, according to the World Health Organisation, could also help to prevent the spread of Bilharzia or Schistosomiasis.

Just as schistosomiasis has spread over the past few decades in poorer countries, so has the incidence of hookworm. Hookworms live in damp earth and enter people through the soles of their feet, travelling through the bloodstream to the intestines, where they live indefinitely.

Irrigation projects worldwide again appear to contribute to the spread of the disease. According to the World Health Organisation "intensified irrigation, dams and other water related projects contribute importantly to this disease burden".

If the principle of sharing was implemented, governments in the North could aid the World Health Organisation to alleviate incidents of schistosomiasis and hookworm.

- Both schistosomiasis and hookworm are eminently treatable with cheap drugs, meaning that more wealthy governments should provide drugs required to treat all the people suffering from schistosomiasis and hookworm
- Educational projects should also be put in place in poorer countries to teach people how to prevent the spread of these diseases
- Adequate sanitation facilities should be provided, to prevent the spread of these diseases
- People in danger of contracting the diseases should be supplied with footwear, to protect their feet

Filariasis

Lymphatic filariasis (also known as elephantiasis), dracunculiasis, onchocerciasis and malaria, are also spread by water borne parasites. One billion people in 80 countries are at risk of infection by elephantiasis, so called because the legs of people infected with the disease swell up to the size of an elephant. Furthermore, 120 million people globally are infected with this disfiguring disease, which is caused by a parasite that lives in mosquitoes. Doctors can now treat the disease with albendazole, a drug developed by GlaxoSmithKline and Merck.

Lymphatic filariasis could be adequately treated if governments helped to integrate participatory programmes for the elimination of this disease, both by treating infected people and preventing the spread of the disease through the provision of adequate housing and bed nets.

Malaria

Malaria, caused by the plasmodium parasite, remains endemic in many Third World countries. 1,600 million people are at risk of infection with malaria worldwide, whilst 396 million people (of which 275 million in Africa) suffer from the disease. The World Health Organisation estimates that 1.4-2.8 million people, most of whom are children under five, die from the disease every year.

To control Malaria, both early prevention and direct treatment are important. In the West, many governments have largely eradicated Malaria, where it previously affected millions. Although it may be impossible to eradicate mosquitoes totally, with modern medical knowledge and global financial resources, it could be easily achievable to treat all those people that are infected. In addition, a strong government role in healthcare provision would help to alleviate malaria. By using organised quarantine methods, infected patients could be isolated to remove the threat of contamination to other mosquitoes and humans.

Donors should provide money for integrated malaria control programmes, combining participatory mosquito control with screening and treatment of infected people in all the countries affected. Every source of stagnant water, where mosquitoes can breed, should be removed and natural methods of eradication could be enhanced to eliminate the remaining mosquitoes (harmless biolarvicides developed in Cuba and currently produced in Argentina by Rosenbush laboratories provide one example).

Dracunculiasis

Dracunculiasis is caused by a parasitic worm, the Guinea worm (Drancunculus medinensis), which spends part of its life cycle in a water flea, and develops in the human body. People catch guinea worms from unclean water in the poorest parts of sub-Saharan Africa, especially in Sudan. The worm migrates under the victim's skin causing severe pain, especially when insertion occurs in the joints. It eventually emerges from the feet, making them swell, blister and ulcerate, accompanied by fever, nausea and vomiting. Although no drug treatment is available, the disease should be completely preventable. In the 1970s, there were several million cases. The World Health Organisation made a serious effort to eradicate the disease and there are now 75,223 cases, most of which are in the Sudan.

Through cooperation and an effective sharing of resources, the Guinea worm could be completely eradicated through the implementation of a proposed World Health Organisation programme by:

- Case containment in all endemic villages
- Community-based surveillance systems in endemic villages
- Providing safe water, health education and water filters
- Mapping all endemic villages and maintaining data bases
- Certifying guinea worm eradication country by country worldwide.

River Blindness

Half a million poor people living in Africa have lost their sight due to river blindness, or onchocerciasis, an insect-borne disease caused by the parasite Onchocerca volvulus and transmitted by blackflies that live on the banks of fast flowing water. Adult worms of the parasite live in nodules in a human body where the female worms produce high numbers of larvae called microfiliariae. These worms then break out of the nodules and find their way to the surface of the skin. Eventually they make their way to the eyes, causing blindness. If caught in time the disease can be treated with the drug ivermectin, or mectizan, a drug developed by GlaxoSmithKline and Merck.

Since 1996, the African Programme for Onchocerciasis Control has introduced mass community-based ivermectin treatment control programmes. A similar programme was set up in South America by the Onchocerciasis Elimination Programme in the Americas. The World Health Organisation formed a Nongovernmental Development Organization Coordination Group for Onchocerciasis Control to promote worldwide interest and support for the use of ivermectin in countries where people suffer from river blindness. So far, the programme has been successful and points the way forward towards the importance of sharing responsibility for the control of some of the world's most debilitating diseases.

Sleeping Sickness

Sleeping sickness is another disease that seriously affects the poor, with at least 50 million people in 36 African countries exposed to the risk of contracting this disease. A parasite, the African trypanosome that lives in the tsetse fly, transmits this disease by biting humans. The parasite lives in the blood of the infected person for a few days, then travels into the brain, where it begins to cause sleep disturbances, eventually killing the infected person.

Colonial powers in Africa in the 1940s and 1950s were almost successful in bringing sleeping sickness under control. They trained local Africans to recognise the relevant parasites under the microscope, took blood samples from every man, woman and child, then treated everyone that had trypanosomes in their blood. The treatment was harsh. People suffering from the early stages of the disease were treated with suramin and pentamidine, both of which have severe side effects, and people already suffering from the late stages of the disease were treated with the arsenic-based drug, melarsoprol, which kills more than ten percent of those treated.

However, there are more effective and humane ways of preventing sleeping sickness, by the eradication of tsetse flies. Experiments in certain African countries proved that tsetse flies could easily be caught in traps that are cheap to make using sticks and cow-urine-impregnated cloth. Such natural solutions and participatory projects should be implemented in all 36 African countries affected.

Leishmaniasis and Chagas Disease

An estimated 200 million poor people in Africa, the Americas and Asia are at risk of infection with the Leishmania parasite. Leishmaniasis is transmitted by phlebotomine sandflies. This disease can either affect the skin, causing sores, or the internal organs,

causing Kala Azar, which is fatal if not treated. Drugs used to treat leishmaniasis are based on antimony (a toxic heavy metal), have to be administered by injection under medical supervision and can cause severe side effects. The Leishmania parasite has become increasingly resistant to these drugs.

In South and Central America the poor are also at risk of infection with Chagas disease, caused by the American Trypanosome parasite, (Trypanosoma cruzi), which lives in the assassin bug. An estimated 649,000 people are infected with this disease. Assassin bugs, which live in the cracks and crevices of poor people's homes, usually in rural areas, come out at night to bite and ingest blood from sleeping humans.

Assassin bugs transmit parasites through their faeces, which then enter the bloodstream of a sleeping human, causing fever and swollen lymph glands. This initial acute phase is sometimes fatal, especially in young children, but most adults survive and the parasite then invades the organs of the body, including the heart, gradually debilitating the person over time. Two drugs, which have severe side effects, Nifurtimox and Benznizadol, can be used to treat the early stage of the disease, but once the parasite is established, it cannot be cured.

Both of these diseases could be prevented by the provision of adequate housing with nets over windows and bed nets to prevent people from being bitten by the sandflies, as well as providing the screening of blood destined for transfusions. Even plastering the cracks in existing houses and substituting metal roofs for thatch could prevent the spread of the disease.

Taenia solium

The pork tapeworm, Taenia solium, is the most common parasitic infection of the central nervous system. Although the pork tapeworm usually lives in the intestine of the people it infects, the eggs from the tapeworm can hatch out and migrate into the muscles, heart, eyes, brain and spinal cord, where they form cysts, sometimes causing epilepsy. This disease is associated with poverty and affects people in South America, Brazil, Central America, Mexico, China, India, SE Asia and sub-Saharan Africa.

It is possible to cure people of the pork tapeworm by dosing them with praziquantel. Clean water and adequate sanitation are also essential for the elimination of the disease, since if tapeworm eggs pass into water sources then the parasite can infect the human population.

In 1993, an international task force for disease eradication declared that governments and health authorities could eradicate Taenia solium because:

- The parasite requires the human to complete its life cycle
- Tapeworms in humans are the only source of infection for pigs
- Authorities can control transmission from pigs to humans
- There is no reservoir of infection in wildlife

Therefore, governments and agencies could control these diseases by providing through adequate water and sanitation and other ‘up-stream' interventions to prevent the spread of infected parasites to humans.

Mohammed Mesbahi is the Founder of Share The World's Resources (STWR).

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