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## **Tuberculosis and Structural Poverty: What can be done? <sup>i</sup>** **Solomon R Benatar <sup>ii</sup> and Ross Upshur <sup>iii</sup>**

Relative and absolute poverty have been constant characteristics of the human condition. Poverty in South Africa shares common causes and manifestations with poverty globally, and in this respect South Africa is a microcosm of the world. With rapid increases in the wealth of the elite over the past fifty years, relative poverty has become more pronounced. At the beginning of the twentieth century the wealthiest 20 per cent of the world's population were nine times richer than the poorest 20 per cent. This ratio has grown progressively – to thirty times by 1960, sixty times by 1990 and to well over 100 times by the early 2000s.<sup>1</sup> In South Africa 40% of the population live on less than R450 per month and are poorer than during apartheid.

The number of extremely poor people in the world more than doubled between 1975 and 1995. Over half of the world's population live on less than \$900 a year, and more than a quarter of the world's population live (on less than \$1 a day) under conditions of absolute poverty. Of the 4.4 billion people in developing countries, over half lack access to sanitation, over 30 per cent lack access to clean water and essential drugs, and almost a quarter are inadequately nourished. The recent global economic crisis, with rapidly rising food prices, committed an additional 100 million people to poverty.

Poverty directly accounts for almost one third of the global burden of disease, and a significant proportion of South Africa's burden of disease. Poverty leads to poor health, which in turn aggravates poverty and reduces human productivity and potential. Ninety-five per cent of TB cases and 98 per cent of TB deaths are in developing countries. Tuberculosis directly affects the economies of poor countries, as 17 per cent of those who die from TB are in the economically productive age group of 15–49 years.

Four eras can be identified within the history and trajectory of tuberculosis in the world. In each of these eras different sets of circumstances have contributed to the amelioration or aggravation of the burden of this disease. In the eighteenth century TB killed about 500 people per 100 000 population every year in the United Kingdom. Improved living conditions associated with the industrial revolution, led to reduction in the annual death rate to 200/100 000 by 1882 (when Koch discovered the tubercle bacillus), and to 50/100 000 by the time the first anti-tuberculosis drugs were introduced in the 1940s. These trends made clear the social underpinnings of the disease—an insight that needs to be more consciously appreciated and acted upon today in South Africa and globally.

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<sup>i</sup> This paper draws extensively, with permission, on Benatar S R, Upshur R. 'Poverty and Tuberculosis: what could (and should) be done?' *International Journal of Tuberculosis and Lung Diseases*. 2010; 14 (10) 1215-1221, and on Benatar S R. 'Some oxygen please for poverty alleviation strategies.' *International Journal of Tuberculosis and Lung Diseases*. 2011; 14 (11) 1425

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In the second era, the mid 1900s, development of drugs, clinical trials showing the effectiveness of short course chemotherapy, and widespread application of such regimens in the United Kingdom and other countries, lead to a further fall in annual mortality to about 5/100 000 in wealthy nations.

In the third era, from the late 1990s to the early 2000s there was a recrudescence of tuberculosis and the emergence of multi- and extensively drug-resistant strains. This could have been averted if political and global health institutions had made the resources available to implement curative regimens worldwide. Instead since the 1970s, when it was potentially possible to eliminate tuberculosis globally, the global economy fostered widening disparities in wealth and in health and the opportunity to address the global challenge of tuberculosis was missed.

In the current era, beginning in the 1980s, the HIV pandemic has resulted in an increase in the life-time incidence of active tuberculosis from 5% in those who had been infected with mycobacterium tuberculosis but remained HIV-negative, to over 50% in those who had become HIV-positive. As a result the global annual load of new cases of tuberculosis increased from 6.6 million in 1990 to 9.3 million in 2007. The added complication of MDR- and XDR-TB (up to 100 times as costly to treat per patient, with much longer and more toxic regimens) is now making tuberculosis potentially untreatable in poor countries where the incidence and prevalence are highest. It should be noted that the mortality rate from tuberculosis in South Africa in 2009 was about 52 per 100,000<sup>2</sup> – resembling the situation in the UK in the early part of the 20<sup>th</sup> century before any drug treatment was available. The incidence of TB in South Africa has risen progressively from about 300 per 100,000 people in the early 1990s to over 600 per 100,000 in the early 200s to over 950 per 100,000 in 2012.<sup>iv</sup> As this disease predominantly strikes younger adults in their prime, the impact, as with HIV/AIDs on families and communities is profound.

Efforts to address many pressing global problems, such as tuberculosis, are currently dominated by a long-standing development agenda that is now being acknowledged as having been both misguided and very inadequate.<sup>3 4</sup> Sadly (given more recent insights into the fact that economic growth is not the solution to poverty), but understandably (given the entrenched dogma about the ‘market’) the new poverty agenda that surfaced in the 1990s, and was embodied in the Millennium Development Goals (MDGs), ‘stresses the importance of market-led growth itself as the most important method to address poverty’.<sup>5</sup> While global institutional efforts have been stepped up in support of the international development targets,<sup>6</sup> current global economic trends are sustaining privilege for a minority of people (about 20% of the world), while simultaneously intensifying inequality, poverty, starvation, violence and abuse of our environment. Such global trends are unsustainable and seriously threaten global health.

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<sup>iv</sup> <http://www.tradingeconomics.com/south-africa/incidence-of-tuberculosis-per-100-000-people-wb-data.html>

We have previously noted that little action has been taken to link poverty reduction strategies and interventions with health outcomes (see articles in footnote i).

It is arguable that the correct answer to why the burden of morbidity and mortality from tuberculosis is increasing in many poor countries, and to why multi-drug resistant TB emerged, lies more in understanding the failures associated with how human society is structured and functions, than from failures of medical practice.<sup>7 8 9</sup> When living conditions for millions of people in South Africa and elsewhere resemble those of pre-industrial revolution England/Europe and in addition, health care services are so inadequate that easily affordable treatment cannot be provided for all who need it in good time and for the full duration required, we should not be surprised that the burden of suffering from tuberculosis has increased and will continue to do so.<sup>4</sup>

How we choose to address ongoing widespread poverty (local and global) lies at the heart of the potential either for tuberculosis to become untreatable due to total drug resistance, and therefore a global tragedy, or for deliberate action to greatly reduce the burden of this potentially controllable disease. As severe poverty is the result of human agency we can choose either of these futures.

### **What could be done?**

Global poverty fuels TB. Those communities that would like to work towards health for all and therefore contribute to human flourishing in the long run, must address the societal causes of poverty and the social determinants of health as an explicit goal of TB control strategies that are placed on an equal footing with medical approaches.<sup>10</sup> The onus is on local and global communities to change perceptions and create conditions where, through social solidarity, a united approach can be developed to face the root causes of poverty.

### ***A new mind-set about ourselves and how we live***

The state of health in South Africa, and the state of global health calls for new paradigms of thought and action. Among many shifts in metaphors that could encourage such progress is a shift from the idea of sustainable development (with development mainly considered in terms of economic growth) to that of developing sustainability (with the idea of development extended to include many facets of human activity other than economic growth).<sup>8</sup> Many more scholars now share the view that the dominant development paradigm (based on individual rights – mainly civil and political - and the acquisition/consumption of increased quantities of frivolous goods and services) neither create a harmonious world community nor develop sustainability. In its place, new paradigms of development are required to facilitate progress towards the goals of sustainability through promotion and respect of rights, and by reducing inequity through protecting basic needs.<sup>11 12 13</sup>

As we have argued elsewhere, an expanded discourse on ethics and human rights more broadly conceived, could act as a wedge to stimulate new ways of thinking about ourselves and about how improved health and security could be achieved for a greater proportion of the world's people.<sup>14</sup> Endeavours to bring bioethics and human rights activities closer together in the quest for improved global health provide an opportunity to reflect both on the content of the Universal Declaration of Human Rights (and of subsequent supportive covenants and declarations) and on the extent to which these aspirations have not yet been met. Pessimism and optimism have been expressed regarding the fulfilment of these declarations to date, and what may be achieved in the future. The despair of some at the extent of continuing and even escalating human rights abuses and violations throughout the world – even in highly privileged societies – is countered by the hope of others that, with the development of international law and other human rights instruments coupled to intensified educational efforts, the impact of the UDHR could be enhanced.<sup>15 16</sup> The General Comment on the Right to Health by the United Nations Committee on Economic, Social and Cultural Rights is a significant milestone, as it defines the commitment to the right to health and identifies specific responsibilities of governments to progressively realise these.<sup>15 17</sup>

In seeking to pursue an ambitious agenda for improving global health there are two main questions to be asked and answered. First, what resources are required in the short-term to achieve immediate beneficial effects? Second, how could the political economy be changed to ameliorate local and global poverty?

### ***What resources are required in the short term and are these available?***

The poorest 1 billion people in the world have health care packages in the region of \$15 per year. It has been calculated that a tax of 1 cent in every \$10 earned by the wealthiest 1 billion in the world could provide the additional \$35 billion required per year to give the poorest 1 billion people a \$50 annual per capita health care package.<sup>v</sup>

If \$35 billion per year sounds a lot we should recall that annual global military spending was \$780 billion in the late 1990s. Industrialized countries spend on average 5.3 % of GNP on the military (global military expenditure in 2007 amounted to US\$ 1.339 trillion) but only about 0.3 % of GNP on economic aid to developing countries.<sup>18</sup> Between 1998 and 2007 world military expenditure increased by 45%.<sup>19</sup> Most recently up to \$17 trillion has been raised world-wide to rescue financial institutions from their fraudulent activities that led to the currently evolving global financial disaster. This is 22 times more than the \$750 billion required over 5 years to achieve the MDGs,<sup>20</sup> and it has not yet been possible to raise this amount!

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<sup>v</sup> Jeffrey Sachs during a video conference presentation at the Canadian Conference on International Health. Ottawa October 2009

Two more statistics are revealing of potential resources. First, in 2007 about \$100 billion was provided to developing countries in the form of Official Development Assistance, of which much was used to pay donor country staff who assist in delivering aid. In the same year developing countries paid \$590 billion in debt repayment – mostly interest on debt.<sup>21</sup> In addition to this there is extraction of mineral and other wealth, as well as active recruitment of trained professionals. Almost 25% of health care professionals in North America have been recruited from low and middle income countries with no attempt being made to provide compensation for the costs of their education.<sup>22</sup> Second, annual farming subsidies of about US \$350 billion in industrialised countries and trade protectionism cost developing countries about US\$100 billion annually in lost export earnings.<sup>23</sup> Allowing farmers in developing countries to sell their products at a fair price and not in competition with massive subsidies could largely eliminate the need for 'development' aid.

Acknowledgment that the efforts of the Canadian International Development Agency (CIDA) have been less successful than desired, and that its agenda should be reinvented, provides welcome recognition of the limitations of so-called development aid.<sup>24</sup>

*“The Canadian International Development Agency has failed to make a foreign aid difference in Africa. Since its inception in 1968, CIDA has spent \$12.4 billion in bilateral assistance to sub-Saharan Africa, with little in the way of demonstrable results. CIDA is ineffective, costly and overly bureaucratic. Approximately 81% of CIDA’s 1,500 employees are based in headquarters in Ottawa. Field staff has little authority to design and implement projects or to allocate funds. This top-heavy system has perpetuated a situation where our development assistance is slow, inflexible, and unresponsive to conditions on the ground.”*<sup>25</sup>

It is vital for privileged people everywhere to be cognisant of the extent to which poverty and many deficiencies in many developing countries have been facilitated by the policies of wealthy nations in pursuit of their own interests. Insight into how favoured lives are sustained by overt and covert exploitation of unseen others could allow those of us who live comfortable lives anywhere in the world to appreciate that we do not have a monopoly of entitlement to the benefits of progress.<sup>26 27 28</sup> In the context of the potentially available resources, as related above, we should also be capable of understanding that there is no real shortage of resources to improve the lives and health of the poorest in our world.

### ***Changing the global political economy:***

While the concept of poverty can be broadened beyond a narrow definition of income, to include other dimensions of human development,<sup>8</sup> the strategies of current anti-poverty program are rooted in market-oriented policies – reflecting and reinforcing the dominant neo-liberal discourse.<sup>9 29</sup> Thus, the first issue to be acknowledged is that alleviating poverty is not about charity or so-called official development assistance, but rather about fostering independence. Whether or not current policies can be changed, and how this may be done, in order to make the world a better place is now a topic being addressed by many.<sup>29 30 31 32 33 34</sup>

To be successful, pursuit of change in the national and global distribution of resources will be essential and will require acknowledging and addressing upstream societal and economic forces that drive the global political economy and aggravate poverty. The long recognized failures of socialism, now accompanied by recognition of radical failures in a distorted, cavalier form of capitalism, make it necessary to seek system change towards a capitalist system characterized by reasonable regulatory and constraining forces and a degree of 'economic democracy' (linkage of labour to profits) that could allow human ingenuity to both generate and utilise resources to improve the human condition.<sup>35</sup>

A series of complex, interdigitating actions needed to reshape macro-economic forces over the short and longer terms will include at a minimum:

- Reframing World Trade Organization activities and trade rules that prevent poor countries from becoming self sufficient in food and other basic needs.
- Encouraging World Bank activities that could reverse old patterns of restraint on poor country expenditure on education and health care.
- Reducing low- and middle-income country debt.
- Moving towards expenditures within budgets to reduce debt accumulation.
- Reducing systematic exploitative extraction of precious raw materials, and curtailment of trade in weapons, both of which involve collusion with powerful despots and kleptocrats.
- Addressing many shortcomings of Official Development Assistance.
- Correcting the misguided idea that philanthropy alone can achieve poverty alleviation.
- Overcoming glib, ideological and often hypocritical use of the term 'development'.
- Reconsideration of tax mechanisms currently associated with dominating market forces that obstruct the goals of public health.
- Restructuring the global commons and ensuring that major industries cannot avoid taxation for the environmental damage they cause that adversely affects the lives of all, particularly the poor.
- Addressing systemic corruption within many components of the global economy and many governments.

In considering these changes (at the levels of institutions, states and internationally) that seek to achieve significant constructive changes, our suggestion is that such complex (perhaps even intractable) global problems require a 'Grand Challenges' approach.<sup>36</sup> By 'Grand Challenges' we mean a large scale, multi-disciplinary series of research projects to explicate in some detail the workings of a complex global system that is undergoing entropy. Such work could foster new depths of understanding, assist in re-framing the ways in which we see ourselves and the world and serve as a prelude to modeling possible ways of making paradigm shifts towards more sustainable life trajectories and constructive changes with the potential to improve global health.<sup>37</sup> The magnitude of this task is arguably as daunting as the task of producing an HIV vaccine.

## Conclusions

Poverty and tuberculosis have been causally linked for decades. Abundant evidence supports this relationship. It is now time to pay more than lip service to this well acknowledged reality and to introduce short-term strategies to determine which poverty alleviation interventions are effective. Priority should be given to determining the effects of poverty alleviation on TB rates. A focus on improving the built environment by including low cost urban design and infection control measures (such as using ambient UV radiation to reduce transmission), known to be effective yet underutilized, will improve living conditions. Redirecting resources to enable communities to better respond to the current burdens of TB, better food security programs and integrating HIV/TB care in a more horizontally oriented primary health care systems, would all be ways of starting the process. Intermediate and long-term solutions would need to be pursued to remediate the upstream forces leading to the creation of structural poverty.<sup>38</sup>

If action is not taken that could begin to reduce poverty, improve living conditions and enable the poorest in our society to achieve their potential as productive working citizens, the problems of tuberculosis, HIV/AIDS and other infectious diseases will surely get steadily worse in South Africa and many other countries. As these diseases know no boundaries and as they have profoundly adverse social and economic effects we shall all pay the price - and a heavy one it will be both for individuals and society.

We can either begin to gear ourselves now towards the new mind set required to face the challenge of alleviating poverty and improving health, in the process achieving meaningful social progress beyond only political emancipation and enrichment of privileged elites, or we can ‘continue with business as usual’ and pay the price later – losing much that has been gained and forgoing future gains. We are free to choose and we shall be condemned to live with our choices! Whether or not we can ameliorate the errors made 40 years ago and reshape the global political economy will be the mark of our resolve as a species to eradicate tuberculosis as a disease that is potentially totally under human control.

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