THE LANCET

Supplementary webappendix

This webappendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Waage J, Banerji R, Campbell O, et al. The Millennium Development Goals: a cross-sectoral analysis and principles for goal setting after 2015. *Lancet* 2010; published online September 13, 2010 DOI:10.1016/S0140-6736(10)61196-8.

The Millennium Development Goals: a cross-sectoral analysis and principles for goal setting after 2015

Analysis of individual MDGs

Correspondence to:
Prof Jeff Waage, London International Development Centre, 36 Gordon Square, London WC1H 0PD, UK
jeff.waage@lidc.bloomsbury.ac.uk

In this webappendix, we present short analyses of each MDG, including their origin and implementation and an analysis of their performance to date. A full list of MDGs and their targets and indicators can be found in panel 1 on pages 4–6 of the main Commission report.

MDG 1 Eradicate extreme poverty and hunger

MDG1 is distinctive as the one goal that is most directly concerned with the more economic and productive aspects of development and with livelihoods of poor people. Its first target, to halve the proportion of people whose income is less than one dollar a day, remains the key feature of the overall MDG commitment to poverty reduction. The origins of this poverty threshold are rooted in World Bank research around 1990, when this figure was a typical national poverty line used for low-income countries.[1] Major efforts have been made since 1990 to improve the quality and availability of poverty data. Meanwhile, the international poverty line now stands at $1.25 because of changes in purchasing power parity estimates.[1] The other two targets of MDG1 received much less attention than poverty incidence in the process leading up to the development of MDG1. Indeed, the employment target 1B was added only later at the 2005 UN World Summit.

Implementation

Most implementation of MDG1 has focused on the first target, Target 1A, and hence on the monitoring of change in levels of poverty. The World Bank has led major initiatives, such as the Living Standards Measurement Study, to provide datasets across countries to allow monitoring of progress on poverty incidence (the proportion of people below the poverty threshold), the poverty gap and national consumption shares (indicators 1.1 to 1.3). Estimated progress on indicator 1.1 (poverty incidence) is widely reported, the other two indicators less widely, but they are drawn from the same set of national expenditure/consumption surveys.

There remain, however, substantial debates about the accuracy and bias in estimates of poverty incidence. Fischer[2] for example, argues that estimates of changes in poverty incidence are affected in largely unknown ways by the choice of the poverty line and its construction (with potential bias and relative under-reporting of more recent poverty incidence), by changes in purchasing power parity estimates, and by different treatment of health and education costs, which are commonly excluded from poverty line definition but included in household expenditure data. Karshenas[3] and Sala-i-Martin[4] also point out inconsistencies between estimates of consumption from household survey data (which are the basis for poverty estimates) and national accounts data (which are used for most other national economic analysis, including growth estimates), with the latter, for instance, estimating consistently lower poverty incidence in China (relative to the former from 1990 onwards) and generally faster rates of poverty reduction.

Differences in poverty estimates arise from differences in sources of information, and poverty definitions and measurement. This has implications for global as well as regional and national achievements of target 1A.

Target 1B—full and productive employment—has been less effectively monitored.[5] Some data are available from Living Standards Measurement Studies, for example for the proportion of employed people living below $1 per day (indicator 1.6). Reasons for this lack of attention may reflect Target 1B's relatively late addition to the MDG indicators and associated lack of target leadership. Only indicator 1.8 is listed in the UN Handbook on Indicators for Monitoring the MDGs,[5] and here only as an "additional indicator" with the International Labour Organization (ILO) as the responsible agency. Target 1B's inherent ambiguities (eg, are high employment to population ratios and high own account (self employed) worker rates good or bad?), its difficulties in achieving clear and valid definitions and measurements of employment, and a general political reluctance to reveal (un)employment rates, particularly in developing countries, may explain poor reporting on this target.

Target 1C—halving, between 1990 and 2015, the proportion of people who suffer from hunger—has involved two different constituencies. UNICEF, WHO and a range of government and other agencies are responsible for data on prevalence of underweight children under-five years of age (indicator 1.8) through surveys using, or compatible with, UNICEF's Multiple Indicator Cluster Survey (MICS), including the USAID-supported Demographic and Health Surveys (DHS) programme. Although performance on this indicator is significantly related to food security (defined in terms of access to food, and its nutritional quality and utilisation), hunger itself (defined in terms of access to food) is more closely associated with indicator 1.9, on which there has been less progress. FAO publishes data[6] on indicator 1.9 (proportion of population below minimum level of dietary energy consumption) but there are methodological difficulties that make it a poor measure of hunger or food insecurity. It is estimated from limited empirical and sometimes poor quality information on national food supplies and on food access relative to food needs in food insecure households of different sizes and compositions.[5]

These problems in capturing hunger as a measurable indicator have stimulated further work on indicators.

The International Food Policy Research Institute (IFPRI), for instance, has recently developed an aggregative 'global hunger index' which is derived by adding the under five mortality rate, the prevalence of underweight children under-five (indicator 1.8) and the proportion of the population below minimum level of dietary energy consumption (indicator 1.9). This index is now tracked annually, with calculated indices going back to 1990.[7]

Analysis

The focus on poverty measurement under MDG1 has generated considerable data and analysis. The UN projects that the global target on indicator 1.1 will be achieved except in sub-Saharan Africa where, as with South Asia, population increase meant that the number of poor people actually increased from 1990 to 2005.[8] Similar but often less positive patterns are revealed by measurements of the poverty gap ratio, of the shares of the richest and poorest quintiles in national consumption, of employment rates and productivity, and of prevalence of underweight children and of low dietary energy consumption.[8,9] There remain, however, major concerns and debates about the reliability of data, as discussed earlier.

By providing indicators for progress and developing improved data system and sets for target 1A, MDG1 has made an important contribution to improving the availability of information and knowledge about poverty and to raising the international and national political profile of poverty in developed countries. It has also focused donors' and governments' attention on poverty reduction and human development.

However, MDG1 has in some ways proven weak as a target because, in contrast to other MDGs, it has no indicators concerned with service access or with policy interventions with significant direct outcomes. While it has outcome targets, its indicators (incidence of extreme poverty, poverty gap ratio, consumption share of the poorest quintile) do not implicitly or explicitly identify an action or policy change that would generate the outcome, nor do they indicate who should deliver what resources for what changes in services. This precluded the use of results-based management approaches dominant in many other MDGs.

Further, MDG1's concept of poverty has been narrowly conceived, and fails to address important relationships with other MDGs, such as education, gender, health and the environment. Perhaps the greatest omission is the emphasis on income poverty with lack of any place for human rights or justice and limited attention to inequality, vulnerability or the importance of food and agriculture in reducing hunger and poverty.

MDG2 Achieve universal primary education

The origins of MDG2 go back to the Universal Declaration of Human Rights which enshrined the right of all to education in 1948 and to the 1960s UNESCO-sponsored conferences and plans to promote the ideas of universal, compulsory and free primary education for all by 1980. New momentum was given to universal primary education at the World Conference on Education for All, held in Jomtien, Thailand in 1990 and its follow-up in Dakar, Senegal in 2000 and at several related UN-sponsored conferences held through the 1990s. The choice of MDG2's three indicators reflects perceived priorities in basic education in the 1990s.

Implementation

The formulation of MDG2 forged a global 'unity of thought' in the education arena. The need for monitoring this goal led to the creation of an international educational infrastructure, a monitoring mechanism (the annual Global Monitoring Report on Education for All, GMR-EFA) and data collection systems more extensive and systematic than hitherto. The post 2000 period has also seen large increases in donors' financial commitments to education which can fairly transparently be linked to MDG2.

One problem with monitoring progress towards MDG2 is the inadequacy of data on the stipulated indicators. A recent assessment of progress by the UN in *The Millennium Development Goals Report 2009* presents information on only one of the indicators—the net enrolment ratio in primary education. Household surveys which measure literacy skills among 15-24 years olds (the third indicator) are not available for most countries.

Analysis

In developing countries the net enrolment ratio (NER) increased from 83% in 2000 to 88% in 2007. This increase can also be seen by region, by urban/rural residence and by gender. For example, the NER in sub-Saharan Africa increased from 58% in 2000 to 74% in 2007; and in Southern Asia from 79% to 90% over the same period.[10]

These positive results need to be interpreted with caution. The NERs are calculated on the basis of student participation in a cycle or stage of education, and not by grade of enrolment. This can be misleading since high NERs can be achieved when very large numbers of over-age children enrol in the early grades of education and drop out soon after. While the second indicator of progress towards MDG2—the proportion of pupils starting Grade 1 who reach the last grade of primary—addresses this concern to some extent this indicator is extremely difficult to assess in systems characterised by late entry, dropout and grade repetition.[11] In Uganda, Malawi and Tanzania where the introduction of free primary education has led to spectacular increases in enrolment in Grade 1, survival rates through the subsequent grades of primary have worsened and the proportion who are seriously overage in primary school (and unlikely to complete primary successfully) has often increased. There is also evidence that in some countries, where overall enrolments have increased, more of the gain has been from the richer rather than poorer

households. The use of NERs as an indicator is blind to this important dynamic.[12]

The generally positive global trend in NER masks considerable variation between and within countries. In the sub-Saharan Africa region, Eritrea, Liberia and Niger report NERs of less than 50% in 2007, while Madagascar, Mauritius, Uganda and Tanzania report NERs of 95% or more. In the South and West Asia region Pakistan and Bangladesh report NERs of 66% and 87% respectively.[11] Within countries NERs vary widely by income group and gender. In general, children from richer families, and boys, are more likely to enrol and reach the end of primary education than children from poorer families, and girls. Wealth and gender patterns vary widely between countries.

Beyond these uncertainties in the interpretation of results, there are more profound issues with the simple target set for MDG2. While a target that all children complete primary schooling was over-ambitious, it was also modest in that it aimed for universality of only primary level education (first five or six years of schooling). There is accumulating evidence that in many countries the pattern of economic returns to education has changed. In wage employment the return to each extra year of education now is typically lowest at the primary level and it generally increases with level of education, ie, the earnings increment from an extra year of education is significantly higher at secondary and tertiary education levels than at the primary.[13] Even non-economic returns of education, eg, in terms of women's fertility, are higher from secondary education compared with those from primary education.[14,15]

Second, in focusing on the completion of five years of schooling, MDG2's target failed to place appropriate emphasis on learning. Enrolment in school is not the same as regularly attending school. Attending school is not the same as participating in learning opportunities, either because the teaching-learning environment is impoverished or because the child is hungry/sick and unable to take advantage of the opportunity. And participation in learning is not the same as the achievement of learning outcomes that are useful, relevant or enduring. In the few developing countries for which data on achievement levels are available, it is clear that average learning levels among school-going children are low.[16–18]

While the third indicator of MDG2 ('literacy among 15–24 year olds') captures learning to some extent, aiming for mere literacy, which in many settings is interpreted as ability to read one's name, is surely setting the bar too low. It is higher order cognitive skills—as tested in standardised tests of reading, maths and science—that are shown to be related to individual earnings, national economic growth and non-market outcomes such as low fertility, low child mortality and improved child health.[18,19] Third, the over-emphasis on the target distracts attention from the means by which the target can be achieved. A wide range of policy issues need to be addressed if targets are to be reached. In most countries the supply and training of teachers has not kept pace with enrolment growth. And in countries with large numbers of small schools, curricula, pedagogy, teacher deployment and teacher education cry out for urgent reform by national and local authorities.[20] Equally, policies to promote children's attendance at school and participation in learning are required at the local authority and school level.

If future education goals are to serve the interests of the poor, they must be formulated in relation to changing economic rewards of different levels of education and to the learning levels expected of those different levels. Primary education is a human right and meaningful post-primary education depends on completion of high quality primary education. But policies for education designed to reduce poverty must include and go beyond the primary level.

MDG 3 Promote gender equality and empower women

MDG3 drew together two perspectives on gender equality in a development context, which might be called the *instrumental social stability* perspective and the *intrinsic women's rights* perspective.[21–24] In the former, gender equality is seen as a form of 'social vaccine' to secure other development goals, eg, population reduction, children's survival, economic growth and better functioning institutions. MDG3's educational indicators particularly address this perspective, and reflect a longstanding commitment to reducing gender discrimination, eg, the 1981 Convention on the Elimination of Discrimination against Women (CEDAW), as well as a widespread 'commonsense' view circulating in World Bank and UNDP circles in the 1990s that women's education was a key to all development problems.[25]

In the women's rights perspective, gender equality in education is intended to enhance women's rights and wider social mobilisation to redress poverty and inequality and promote the empowerment of women, ie, more than just getting girls into school. This perspective was a major element of the Beijing Declaration and Platform for Action adopted at the third World Conference on Women in 1995. MDG3's indicators on the share of women in wage employment in the non-agricultural sector and proportion of seats held by women in national parliaments addressed this perspective.

Implementation

In the implementation of MDG3, the two perspectives on gender equity became separated, and the social stability perspective came to dominate the process. Arguments such as those of Abu-Ghaida and Klasen[26]—that if MDG3's educational indicators were not met GDP growth rates would be 0.4% lower, fertility decline would be 0.6 children per woman less and child mortality higher by 20–32 children per 1000—were frequently cited in the policy documents of donor and multi-lateral agencies tasked with delivering on the MDGs.

The fulfillment of the target on gender parity in primary and secondary education was set for 2005, earlier than that set for all the other MDGs, because it was believed that this would indicate increasing access of women to education and that this was a lynchpin and precondition for the achievement of all the other MDGs. This proved to be a poisoned chalice. The date was far too early for the MDG message to have been internalised by governments and civil society and took little account of the resources that would be required and the poor understanding of the range of local issues that kept children out of school. In 2005 the gender parity in education target was missed in 74 countries. There was no major global outcry. While UNESCO, the Global Campaign for Education and other international organisations registered their dismay, many governments did not. The political message seemed to be that large numbers of governments did not take MDG3 seriously.

While progress on educational indicators has been generally limited, countries like Ethiopia, Senegal, Yemen, Djibouti, Nepal and Cambodia have made substantial advances in the Gender Parity Index (GPI, ratio of girls to boys in the net primary enrolment ratio, NER).[27] In Ethiopia, for instance, this has climbed from 0.69 in 1999 to 0.92 in 2006. It is noteworthy that, of these high achieving countries, only Nepal has achieved a GPI increase at secondary level. Further, for all of these countries, the GPI for the lowest quintile was considerably lower than that for the country as a whole.

While most countries in the Arab states, Europe, Central Asia and Latin America were close to gender parity in enrolments in secondary education by 2007, huge gaps remained in sub-Saharan Africa and some countries in South Asia. For example, the GPI in the NER in secondary education was 0.72 in Eritrea, 0.82 in Nigeria and 0.83 in Mozambique, while in Afghanistan the GPI of NER was 0.38 and in Pakistan it was 0.76.[11]

Achievements have also occurred in expanding access for women to tertiary education in many regions.[11] However, measures mask difficulties in access for women from the lowest economic quintiles and from groups that had historically experienced discrimination.[28,29] Large gender gaps in tertiary enrolments were also evident in South Asia and sub-Saharan Africa.[11]

A task force set up in 2005 to review MDG3 reaffirmed the interdependence of MDG3 and other MDGs, and added a number of gender-related priorities to those already captured in the targets.[30] This 'MDG3 plus' agenda gained the support of the World Bank and UNDP, and had the following elements with a broader set of additional indicators. The suggested indicators to be added were gender and primary completion; under-five mortality (gender disaggregated); youth (15–24) and adult labour force participation (by gender); average hourly wage; percentage of women of reproductive age and partners using modern contraception; and percentage of 15–19 year old girls who are young mothers or pregnant with their first child.[31]

Assessing progress on these indicators in 2006 indicated that no region of the world had extensive levels of gender equality. The 2008 MDG report did not report on progress against all this broader list of indicators, sticking simply to the initial four indicators of gender parity in primary and secondary education, tertiary education, non-agricultural wage employment, and women in national parliament. A debate over the datasets to be used for the 'MDG3 plus' indicators has been one factor limiting their implementation.

Analysis

The very substantial resources estimated to be required for achieving MDG3[30] did not materialise. This has led to suggestions that more focused initiatives in gender mainstreaming[32] or gender budgeting[33] may be more feasible.

Many governments interpreted MDG3 largely in terms of the education indicators. They set up, improved, and/or scrutinised their education management information systems (EMIS) to examine whether they were achieving gender parity in primary and secondary education. There is considerable debate about the value of emphasising these educational targets.[34–36] That part of MDG3 focused on a women's rights perspective, with its associated indicators relating to employment and parliamentary representation, has been largely ignored as governments focused on the "low hanging fruit" of increasing enrolment of girls in schools. In most countries, political decision making continues to be dominated by men, and 58 countries have 10% or fewer women members of Parliament. However, exceptional progress has been made in Rwanda, where women occupy 56% of parliamentary seats,[37] and Spain, where the new cabinet sworn in by Prime Minister Zapatero in 2008 had more women than men– a first for Europe.[8]

While the expanded 'MDG plus' agenda did bring in new indicators that better addressed the women's rights/Beijing agenda, the fact that these did not even feature in the MDG mid-point review raises questions regarding their ownership. As a result, the women's rights movement has been divided on whether to ignore the MDGs altogether, as 'most distracting gimmicks'[38] or whether to engage tactically with the MDG process[39] to steer them towards the Beijing Platform's agenda on women's rights and governmental accountability for their delivery.[22,40] A number of studies point out that even the 'MDG3 plus' agenda does not sufficiently address key vulnerabilities of poor women particularly their reliance on a monetarised economy, their environmental risks, competition for space and services, intra-household allocations and violence against women.[41,42]

On the positive side, aid organisations have used MDG3 to give prominence to gender in their programmes. For countries to qualify for Poverty Reduction Strategy

Papers (PRSPs), for instance, donors require a discussion of gender and strategies for improving parity, but the gender element is often focused on a few areas, largely schooling. However, some aid agencies have used MDG3 to give substantial support to the wider gender agenda of Education for All through, for example, funding for Forum for African Women Educationalists (FAWE) in Africa, establishing the United Nations Girls' Education Initiative (UNGEI) based in UNICEF, and support for Camfed (Campaign for Female Education) in selected African countries.

There are emerging funding initiatives for civil society around MDG3, most notably the Dutch Government's MDG3 fund,[43] and the Danish Government has recently tried to play a leadership role on MDG 3 with the launch in 2008 of the MDG3 Champion torch campaign which encouraged 'Doing Something Extra' in support of gender equality and women's economic empowerment.[44]

On 2 July, 2010, the UN General Assembly voted unanimously for the establishment of a new gender entity called UN Women, merging the United Nations Development Fund for Women (UNIFEM), the Office of the Special Adviser on Gender Issues, the UN Division for the Advancement of Women and the International Research and Training Institute for the Advancement of Women (INSTRAW). Such an entity, which will be headed by an under-secretary-general, and is due to be operational from January 2011, should result in much stronger leadership on gender from within the UN system in the run up to 2015.

Overall, the limited implementation of MDG3 would seem to be associated with a lack of leadership, particularly in the women's rights area, where relevant civil society organizations were not involved in its development, and in limited ownership by governments, in contrast to aid organisations.

MDG4 Increase child survival

MDG4 had its origins in a long history of efforts to improve child survival. In 1980, UNICEF published, for the first time, national, regional and global estimates for child mortality which, despite the weakness of the data available, rallied world opinion behind its call for a 'Child Survival Revolution'.[45] This initiative promoted Growth monitoring, Oral rehydration, Breast feeding, Immunization (GOBI).[46] Various regional and global goals were devised, the best known of which was Universal Childhood Immunization (UCI) which had been originally adopted by the World Health Organization (WHO) in 1977.[47] The goal of UCI stimulated a considerable global effort and its goals were considered by most as having been achieved.[48]

Global goals on child survival were first proposed at the Convention on the Rights of the Child in 1990, which agreed a set of global child mortality goals based on a reduction in infant and under-five child mortality rates by one-third, or to 50 and 70 per 1000 live births by 2000, but these gained little support and, with the perceived UCI achievement, child survival could be seen as lower priority for organisations like UNICEF and WHO in the 1990s. More ambitious child survival targets were proposed at the UN International Conference on Population and Development in Cairo in 1994. These were taken to the Millennium Summit in 2000, evolving ultimately into MDG4.

Implementation

The initial response from WHO and UNICEF to MDG4 was muted. By 2002 it had become clear that the MDGs had high level political support, so WHO, whose governance is linked to national governments, began to define a role for itself in the post-MDG world. UNICEF was also something of a reluctant convert. The creation of the Global Alliance for Vaccines and Immunization (GAVI) in 1999 with significant funds from public and private partners also revitalised interest in child survival through strengthened vaccination efforts.

Indeed, the momentum for progress towards MDG4 seems to owe more to individuals than to organisations. In February 2003 a group of child survival experts met in Bellagio, Italy. As a result of this, *The Lancet* published a special series of articles on child survival.[49] While these articles did not bring new information to the field, they served to simplify this field and make it more understandable to donors. In particular, the series proposed a clear list of interventions with precise estimates of how much mortality each would prevent, on which donor organisations could project budgeting for child survival activities. These could then be applied to tools such as the Marginal Budgeting for Bottlenecks (MBB) tool[50] to identify bottlenecks and to cost and budget for various child survival interventions to achieve their impacts on reducing mortality. While these predictions were not necessarily accurate in all settings, they provided the impetus for child survival activities to move forward.

While a specific set of interventions have been identified, in most cases the degree of uncertainty is such that it is impossible to say which interventions are more cost effective. However, advocates for particular approaches push very hard and are increasingly presenting governments with one-dimensional business plans in support of a single strategy. Where expensive new vaccines are under consideration, the influence of large multinational companies further complicates the situation.

Analysis

Statistics from developing countries indicate that, globally, the mortality rate for children under five has declined from 103 in 1990 to 65 in 2008.[51] This progress is much slower than what is needed for the world to achieve MDG4 by 2015. The Countdown to 2015 initiative has been charged with monitoring progress in 68 high priority countries.[52] Of those 68 countries, only 16 have been judged to be 'on track' to achieve MDG4, while a further 26 were judged to

be making some progress but insufficient to achieve MDG4. Only one sub-Saharan African country, Eritrea, is said to be on track, yet a close examination of that country raises serious concerns about the degree of mortality under-reporting, especially of neonatal mortality, as the lowest socioeconomic quintile reports lower mortality rates than two wealthier quintiles.[53] Indeed, close examination of other countries said to be on track raises concerns about the data quality. China reports unlikely dramatic declines in child mortality, including a 48% decline in mortality in just 5 years between 2002 and 2007.[54] Murray and colleagues conducted a detailed analysis of the period before and after the MDGs were launched and concluded that the impact on child mortality has been minimal.[55]

Most child survival interventions rely on the existence of a functioning health service.[56] In most developing countries the health service only reaches a proportion of the population. Thus repeated interventions delivered through the health service are likely to reach the same populations, and by implication those outside the reach of the health services will continue to miss out.[57] It follows then that repeated application of interventions through the health services will serve to increase the mortality gap in a community leading to increasing inequity in child survival. There is now strong evidence that this is indeed taking place.[58] As 2015 approaches, there is a real danger that we may see a repeat of the experience seen with UCI in the 1980s whereby the increasing use of short-term child survival strategies to achieve a fixed goal is followed by a sudden loss of interest among the same politicians whose enthusiasm has driven MDG4. Any last-minute push to get closer to the targets with short term measures is likely to exacerbate inequity in child survival, as the efforts will likely be focusing on 'low-hanging fruits' while ignoring those in greatest need.

More fundamentally, the target for MDG4 was unrealistic. The proposal of a two-thirds reduction between 1990 and 2015 was based on extrapolation from lines drawn in the 1980s. This was almost certainly using data of very poor quality, which was more likely to have been affected by political issues of the 1980s than by real progress. For African countries with limited infrastructure, this is particularly true. For example, Niger has seen a decline in child mortality of 67 deaths per 1000, yet this is judged as insufficient progress as it represents only a 21% decline from 1990 levels.[52]

While MDG4 may have increased support for child survival strategies in the developing world it has also set up many countries for failure from unrealistic targets. There are a number of major problems with the structure, implementation, and evaluation of MDG4. Data on child mortality in the poorest countries is notoriously poor, especially for neonatal mortality which appears to be systematically underestimated in many areas. There is a natural tendency for repeated application of different child survival interventions to increase inequity. The lack of reference to inequity, and weak monitoring of trends in inequity are major problems with MDG4. Finally the growing proximity of the deadline for MDG4 is likely to see the application of increasingly short-term strategies, many of which may not be sustainable.

MDG 5 Improve maternal health

Improvement of maternal health was first brought to international attention in the mid-1980s after the international women's movement raised the issue of high maternal mortality at the 1984 International Conference on Population and Development (ICPD) and at the 1985 World Conference on the UN Decade for Women. In 1987 the Safe Motherhood Initiative (SMI) was launched and conference attendees heard of the 500 000 maternal deaths which occurred annually. The goal subsequently articulated was to prevent maternal mortality and related morbidities, and to promote a healthy woman and newborn. The target set was to reduce maternal deaths by 50% by 2000, coinciding with the Alma Ata target of health for all by 2000.[59] The indicator chosen, the Maternal Mortality Ratio (MMR), fitted with a view that had emerged in the 1980s suggesting that targeted mortality foci and 'vertical' health initiatives were successful (eg, the Child Survival revolution), but it also addressed an adult cause-of-death affecting economically productive individuals, a priority encouraged by the World Bank.[24] The MMR target was raised when maternal health was included in the OECD DAC's international development targets,[60] which led to MDG5. Its association with Skilled Birth Attendants (SBAs) at delivery derives from a recommendation of the 1997 SMI meeting. Countries with high proportions of women attended by skilled health workers at delivery have low maternal mortality.[61] In practice, and in most countries, this means institutional deliveries.[62]

Implementation

With its emphasis on MMR, rather than the rate or number of deaths, MDG5's initial formulation limited the visible contribution that family planning could make by reducing unwanted pregnancy and unsafe abortion. Moreover, the poor quality of civil registration has made the MMR a costly indicator to measure or use for planning, targeting or tracking. This was recognised at the outset, and indicator 5.2, SBAs, was included in part because it could be measured readily through household surveys.

Except for financing initiatives initiated in very recent years,[63] there is very little evidence of wide-scale implementation of interventions to increase the quantity or quality of, or the access to, SBAs. Nor have credible efforts been made to improve access to Emergency Obstetric Care (EmOC) for women with complications. Rather, actions in support of MDG5 often attempt to bypass a facility-based health system by seeking community-based solutions, such as educating women on warning signs of complications, or training traditional birth attendants or community volunteers. There is little evidence that scale-up of such community-based pro-

grammes will yield meaningful reductions in maternal deaths but they appeal to some donors and Non-Governmental Organisations (NGOs), not least because they promise equitable access for marginalised rural poor populations. Support for antenatal care was maintained over the period but family planning and reproductive health stagnated in the face of hostility by the Bush administration.[64]

In 2008, target 5B –aimed at universal access to reproductive health– was added as a result of efforts by the United Nations Population Fund (UNFPA) and a large constituency of NGOs working in family planning and reproductive health. The 1996 OECD DAC had also included these reproductive health targets initially proposed by the 1994 ICPD, but these were not initially adopted as part of the MDGs because they were contested by a coalition opposed to reproductive rights, led by the US amongst others. Target 5B supports maternal and neonatal health services by including an indicator of antenatal care coverage, but also addresses family planning by using indicators for reducing unmet need, increasing the contraceptive prevalence rate and reducing adolescent pregnancy. Support for family planning in the MDGs has come very late for political reasons, and its substantial potential impact has not been realised. The maternal health community always recognised that access to contraception and safe induced abortion services would reduce a subset of maternal deaths, but sought care for all women including those who wanted to give birth, particularly those needing emergency obstetric care.

Within the UN agencies, a single leadership and focus for maternal health is missing. Within the WHO, the lead technical agency, maternal health is split between Making Pregnancy Safer, the Human Reproduction Programme and (for the newborn) the Department for Child and Adolescent Health. Among agencies with funds for implementation, both UNICEF and UNFPA play a role, crudely caricatured as being concerned with antenatal/postnatal care and delivery care respectively. In practice, activity depends on strengths in-country, but UNICEF staff remain largely concerned with issues related to child health, particularly those with a community focus, and UNFPA staff traditionally have reproductive rather than maternal health expertise. The World Bank has played less of a lead in recent years, and a global fund does not specifically address maternal mortality.

Analysis

MDG5 is widely held up as the most unsuccessful MDG to date.[65] Between 1990 and 2005, when the latest UN figures were estimated, global MMR decreased from 430 deaths per 100 000 live births in 1990 to 400 in 2005.[66] This is a total of 7% (roughly 0.4% per year, well short of the 5.5% annual reduction required to achieve the global target). Sub-Saharan Africa experienced an absolute increase in numbers of maternal deaths (from 212 000 in 1990 to 270 000 in 2005), albeit accompanying an increase in the number of live births (from 23 million in 1990 to 30 million in 2005). A more recent paper suggested a greater decline and estimated that MMR declined from 320 in 1990 to 251 in 2008, a decline of 22% (roughly 1.2% per year).[67] Skilled birth attendance increased from 45% in 1990 to 54% in 2000, an increase of 20%, but in Sub Saharan Africa this was from 39% to 40%.[68] Data on improvements in access to emergency obstetric care are minimal; only 40% of the 68 Countdown to 2015 countries report figures.[69]

This poor performance may be in part due to the lack of international leadership and coordination noted above, but is probably also related to governments not prioritising this issue, except in response to donor pressure, and the slow development of civil society engagement. The low status of women may underlie all of these shortcomings, coupled with a lack of financing and human resources.

Another factor that has undermined MDG5 has been conflict with MDG4 across the continuum between maternal, neonatal and child health. The SMI was launched in the shadow of successful Child Survival and Family Planning initiatives, which had large resources at the time. For this reason, it may have been felt unnecessary for this progenitor of MDG5 to include a strong family planning or child health emphasis since these were well resourced in comparison, and a narrow focus on maternal mortality was emphasised instead. Subsequently, the strong programmatic link to neonatal health was understood, and efforts have been made to form partnerships between initiatives in maternal, neonatal and child health, such as the Partnership for Maternal, Newborn and Child Health, arising from a merger in 2005 of the Global Partnership for Safe Motherhood and Newborn Health with the Child Survival Partnership and Saving Newborn Lives.

Efforts to break down institutional silos and territoriality between agencies that own these different issues have not always been successful and as a result, synergies are not realised and competition for resources arises.Investment in community workers to increase child survival may, for instance, compete with investment in expanding skilled birth attendance. The Countdown to 2015 which tracks progress towards MDGs 4 and 5 is a notable exception.

MDG 6 Combat HIV/AIDS, malaria and other diseases

Since its recognition in 1981, the understanding of the HIV epidemic evolved from an epidemiological outbreak in well-defined communities to a global issue cutting across health, human rights,[70] security[71] and development.[72] It is therefore impossible to separate the political pressures that led to the inclusion of MDG6 from the wider movements that raised HIV up the political agenda well before the MDGs. A special session of the UN assembly had been held on HIV, UNAIDS had been set up to coordinate its response, and large, new initiatives had been established, including the US Presidential

Emergency Plan for AIDS Relief (PEPFAR). Their initiatives were also ongoing to control malaria and tuberculosis and when the Global Fund to fight AIDS, Tuberculosis and Malaria was established, its focus on halting the spread and reducing the incidence of these three diseases would be mirrored in MDG6. As HIV prevalence increased in poor countries, the international community and the UN General Assembly, driven by demands for inclusivity and the moral imperative for equity, took up the challenge of universal access, building on WHO's 3 by 5 initiative (to treat three million people living with HIV/AIDS by 2005). This subsequently became Target 6B.

Implementation

The implementation of MDG6 encountered quite different issues in dealing with three distinctive diseases.

For HIV, the recent focus of implementation has been strongly on treatment, for a range of reasons, even though 'reversing the spread' relates more to prevention. There are remarkably few interventions relating to prevention that have been proven to work at the community or even at the individual level.[73] With treatment has come the commitment to universal access, made during the years of economic boom and in the optimism of a new millennium. This is now threatened by the realities of inadequate funding from national governments and development partners as well as by the challenges of weak health systems and competing priorities. Substantially more support needs to be pledged if PEPFAR and the Global Fund, the two largest investors in HIV treatment, are to be able to continue to fund the extraordinary expansion of services that has seen more than four million people started on anti-retroviral drugs over the past decade. In addition national governments are already facing gaps in their budgets for treatment in countries with a high prevalence of infection.

Methodological problems have emerged in HIV/AIDS monitoring. For instance, both UNAIDS and the Centers for Disease Control and Prevention (CDC) in the US collate data on HIV prevalence (either from demographic and health surveys or more commonly from ante-natal surveillance), and issue reports each year. However, as more and more people are living with HIV as a result of anti-retroviral treatment, prevalence is a less valuable measure and incidence data is needed. Ante-natal survey data excludes men, and inevitably focuses on sexually active women. Much modelling has been done to try to correct biases introduced in this way, and increasingly countries with generalised epidemics are trying to use population-based sampling.

It is widely recognised that many people who are treated for malaria do not have the infection and that many people who do have malaria are not included in health system statistics.[74] Periodic and geographically limited surveys are therefore interpolated to come up with global estimates that are used to demonstrate that we are meeting the MDG6 target. However, surveys are showing that there has been a considerable reduction in the number of malaria deaths and rates of disease that are associated with the massive scale-up of delivery of insecticide-treated bed nets and the move towards treatment with artemisinin combination therapy.

As with HIV, there has been a major political movement to fight malaria that has run in parallel to the MDG6 discussions. It seems likely that each has nurtured the other. Malaria No More and other organisations emphasise two major thrusts that go beyond the MDG6 target: firstly to provide universal access to insecticide-treated nets in the areas where malaria morbidity and mortality are still high and, secondly, to 'shrink the map' by targeting countries where malaria could be eliminated as a public health problem.

History emphasises how rapidly and catastrophically malaria can resurge following control efforts.[75] The MDG6 target and indicators do not take this into account, so a more long-term perspective is essential. Treated bednets need replacement at five-year intervals, while treatment programmes must anticipate and manage drug resistance.

Long before anti-retroviral drugs filled the pharmacy shelves, it was possible to visit many health centres across the poorest parts of the world and find that almost the only drugs held in the cupboards were those to treat tuberculosis (TB). But many TB programmes were not successful when made part of a generic system for drug procurement and treatment,[76] and failure to treat TB in this way threatened the community with ongoing transmission and with the spectre of developing drug resistance that in most poor countries was, until recently, and may still be, essentially untreatable and transmissible. MDG6 has supported a more vertical approach to TB treatment, based on the Directly Observed Treatment, Short-course (DOTS) programme, with its focus on measuring the outcome of all patients through cohort analysis, separation of procurement and supply of anti-TB drugs from the general services, and programme specific supervision and staffing.

While DOTS programmes have certainly reduced mortality rates from TB, recent analyses suggest that they have had less impact on incidence of disease than was originally anticipated.[77] This may well be because the focus has been on curing patients, rather than on finding the infectious ones more quickly, as many surveys confirm that there are many undiagnosed patients lurking in the community transmitting infection for years prior to diagnosis.[78,79]

Analysis

While there have been problems with implementation, MDG6 has been broadly successful with respect to its targets 6A and 6C. The incidence of HIV probably peaked before 2000, malaria morbidity and mortality (although harder to measure) are currently on the decline and TB incidence has also reached its peak. Whatever the

challenges of implementation, the contribution to reducing mortality and morbidity has been very impressive. It is not possible to determine the precise contribution of MDG6 to this progress through increasing funding and focusing effort.

A principle issue facing MDG6 is its sustainability. The diseases targeted are all capable of overcoming control measures if not applied consistently and constantly improved. Only in this way can development of resistance to medicines or vector control measures be addressed.

Common to the implementation of programmes against all three diseases has been a focus on vertical organisations and delivery of treatments. As treatment services have been expanded, the underlying weakness in many health systems has been exposed. The extent to which investments made by global health initiatives such as PEPFAR and the Global Fund have been able to strengthen health systems is widely debated. A recent survey of the evidence was inconclusive and provided examples both of clear synergies between disease-specific investments and general health services, but also potential threats, particularly with regard to distortions in planning and prioritisation processes.[80] There is little question, however, that long-term management of these and other communicable diseases will require strong health systems that can monitor and manage control programmes, including the development of resistance to drugs and other changes.

While the focus on three diseases may have led to unnecessary duplication of planning, to excessive financial reporting and monitoring requirements, and possibly to shifts in health care staff away from other important areas of work, we should not lose sight of the more generic lessons that can be learned from the new focus on chronic communicable disease programmes.[81] These include a greater attention to structured care with an outcome oriented approach requiring better data management and increasing capacity for laboratory services. While inadequate human resources prevent health systems from functioning, and HIV treatment services are often better funded and so able to retain or divert staff, there is also evidence from Malawi (a country with a severe HIV epidemic) that more health care workers are kept alive by anti-retroviral drugs than are needed to deliver them.[82]

MDG 7 Ensure environmental sustainability

Environmental issues have not always sat comfortably with international development. Historically, intensification of agriculture and industry for economic growth has often come into conflict with environmental protection and sustainability objectives. Inclusion in the MDGs of MDG 7 recognised that, despite this tension, future international development strategies must be achieved in an environmentally sustainable way. The 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro identified the need for international and national initiatives on climate change, forest conservation and biodiversity, and established 'sustainable development' as a shared, international objective, integrating economic growth, equity and environmental protection. This bundle of international environmental priorities was incorporated into the OECD DAC's international development targets.[60] This would later become MDG7, with inclusion of targets for improving water provision and conditions for slum dwellers, taken from the World Water Forum's Ministerial Conference, and the UN/World Bank initiative 'Cities without Slums' in 2000 and 1999, respectively.

Implementation

MDG7 combines two very different kinds of targets, which accounts for the emerging pattern of its implementation and impact. Targets 7C and 7D, on water supply and sanitation and slum dwellers are specific, quantitative and supported by precise indicators. They had a precedent in specific sectoral initiatives.

Targets 7A and 7B are, by contrast, imprecise, qualitative and overlapping—what kind of policy change needs to be achieved, what rate of biodiversity loss needs to be measured and changed? There is also considerable inconsistency in the association of indicators with targets. The distribution of targets and indicators in Table 1 is that provided by the UN Statistics Division,[83] the official UN site. By contrast, UNDP put all the indicators under 7B.[84]

Without identifying changes to be achieved, the indicators in Targets 7A and 7B simply highlight areas for monitoring environmental change. As such, MDG7 may be contributing to recent growth in environmental monitoring which is making use of advances in earth observation, computing and geographical information systems, but it is not stimulating directed action or policy change. The World Bank has recently developed two measures of change in environmental policy which suggest an approach to a more directed implementation of these targets: an Environmental Performance Index which ranks countries on policies relative to broadly accepted targets in environmental health, air pollution, water resources biodiversity, productive natural resources and climate change, and a Country Policy and Institutional Assessment which tracks national environmental policies for different sectors, eg, the adequacy of prioritisation or the level of public information and participation.[85]

Analysis

It is likely that the global target on access to drinking water will be met or exceeded. If current trends continue, by 2015 86% of the population in developing regions will have gained access to improved sources of drinking water. Most progress has been made in rural areas, where most problems with access, particularly in sub-Saharan Africa, remain. Sanitation has historically received comparatively less attention from governments than water, and this target is unlikely to be met globally, with South Asia and

sub-Saharan Africa facing the greatest challenges. While the population that uses an improved sanitation facility has more than doubled between 1990 and 2006 in South Asia and increased by over 80% in Africa,[10] an estimated 2.6 billion still lacked access to such a facility in 2008 and most improved access has been concentrated in wealthier parts of the population.[86] Progress with slum dwellers has been measured relative to provision of four basic amenities: clean water, improved sanitation, durable housing and adequate living space—the lack of at least one of these defines a slum. Against this metric, the lives of slum dwellers have improved in almost all regions, much of which is associated with improved water supply and sanitation. Africa, where slums are often characterised by a lack of several of the above amenities, remains the region with greatest challenges. Overall, while the proportion of urban populations living in slums has declined from 39% to 33% between 2000 and 2010, the rapid growth in urban populations means that the overall number of slum dwellers is still increasing.[85]

For targets 7A and 7B, UN MDG progress reports tend to present general data on environmental trends, assessed by different studies over varying timescales. All trends show a decline in recent years in forests, fisheries, biodiversity, and water—all natural resources where MDG7 has targeted reduction or reversal in loss. The target to reduce the rate of biodiversity loss by 2010 has not been met and, if anything, biodiversity loss is accelerating. Over the same period, greenhouse gas emissions have continued to rise. MDG7 reports can, however, celebrate the successful reduction by 97% of the consumption of substances that deplete the Earth's ozone layer, towards which 175 country signatories of the Montreal Protocol contributed in a process that predates the MDGs.[10]

In summary, while there has been substantial progress against targets involving drinking water, sanitation and housing, progress on environmental targets has been virtually non-existent. A number of features of Targets 7A and 7B may contribute to this dismal record. Firstly, there is a poor link between these targets and measures of human development or economic growth. Without a way to link reducing environmental degradation directly to human benefit, governments are unlikely to make the commitments to MDG7 that they make to MDGs on education, health and poverty. New tools to do this are emerging, including the concept of "ecosystem services" promoted by the Millennium Ecosystem Assessment,[87] which places a value on those services which ecosystems provide, eg, clean water and air, biodiversity for breeding crops and livestock, and the concept of "environmental mainstreaming" in development agendas.[88] Unfortunately these mechanisms came too late to guide the design of indicators for Targets 7A and 7B.

Secondly, it must be said that, unlike other targets for MDGs 1–7, 7A and 7B identify action needed at the global level and not simply in developing countries. While, on a global scale, the poor suffer most from environmental degradation,[86] the cause of such degradation may lie, as with climate change, outside the developing world.

Finally, our understanding of environmental threats has changed dramatically since the establishment of the MDGs, such that their focus may not fit our current understanding of environment and development needs. In particular, climate change is understood today as a far more important issue than earlier. Its impact on poverty will be more effectively addressed by adaptation rather than mitigation (the focus of indicator 7.2). For many poorer regions, climate change will make water and its availability a key environmental constraint on development, extending needs for water beyond those identified in Target 7C.[89]

MDG 8 Develop a global partnership for development

The desirability and anticipated benefits of a "global development partnership" were repeatedly referred to in the OECD DAC's seminal 1996 report *Shaping the 21st Century: The Contribution of Development Cooperation*.[60] Specific partnership promises then emerged in 2000 in *We the Peoples: The Role of the United Nations in the 21st Century*, which emphasised "solidarity" and "shared responsibility".[90] It urged rich countries to improve market access to poor countries' products, improve debt relief and aid, maximise access to new information networks, and focus attention on Africa. Subsequent clauses were later added to improve the availability and affordability of medicines, and address the special needs of small island states. When combined, all of these provisions led to the creation of MDG8's six targets.

These partnership promises have been dismissed as "standard aid agency rhetoric", but at the time they helped to secure the support of poorer nations.[91] Nonetheless, grossly unequal power relations were still evident during the negotiations, thereby explaining the generic nature of MDG8 targets and absence of time limits (unlike the other MDGs). MDG8 details were left purposefully vague and deferred to a high-level International and Intergovernmental Event on Financing for Development in Monterrey, which was postponed until 2002.

Implementation

MDG8 is exceptional among the MDGs as it primarily concerns actions to be taken by rich countries.[91,92] Assessing its implementation is problematic because MDG8 operates at the global rather than the national level, includes loosely defined and diverse targets, and involves multiple actors, including rich countries, International Financial Institutions (IFIs) and the private sector. Targets are characterised as "general objectives" rather than "concrete policy changes".[92] Even reports produced by the UN system—the instigator and main supporter of the MDG framework—criticise the lack of "quantitative targets" and inconsistency among MDG8's

targets.[93] The confusion is pervasive, especially because of the different ways of interpreting changing commitments post–2000.[93] For example, should pledges about trade, aid and debt reached at Monterrey in 2002 and Gleneagles in 2005 be subsumed within MDG8 in keeping with its generic targets on those issues, or should they be judged as separate benchmarks?

The extent of these concerns is unique to MDG 8. The other MDGs each broadly relate to one sector (ie, education or child health), are easier to monitor, and have prompted data collection and monitoring mechanisms. UN Secretary-General Ban Ki-moon explained how UN processes track progress on MDGs1–7, yet assessing MDG8 has "proved more difficult".[93] In 2007 he set up the MDG Gap Task Force specifically to address the problems of measuring the degree of delivery towards MDG8. The fact that this body was created only halfway through the lifetime of the MDGs is telling.

Analysis

MDG8 was designed to create an enabling environment to benefit the advance of the other more specific MDGs. However, it has been largely ineffectual at achieving this and its own targets since its beginnings. Already in 2003 its progress was deemed to be "extremely slow".[94] Its prospects are now worsening because of the impact of the economic crisis. Today total aid remains far below the UN's target of 0.7 GNI, with only five countries reaching this benchmark.[8] The collapse of the Doha trade round has also undermined the likelihood of significantly better market access for developing countries. Likewise, the downturn is exacerbating the number of people unable to obtain affordable medicines.[93] Accelerating progress towards MDG8 has now become an "emergency".[93] Despite these setbacks, the latest UN report on the MDGs records some progress regarding debt relief: the ratio of debt service to exports remained stable or fell in most developing regions in 2008, 40 countries are eligible for debt relief under the Heavily Indebted Poor Countries (HIPC) initiative, and debt burdens are expected to remain "well below historical levels".[8]

The current failings of MDG8 and its omissions have provoked alternative suggestions to improve a global development partnership. Fukuda-Parr has called for an "urgent" realignment to the challenges identified in the Monterrey consensus, and a shift from "charity" to "solidarity".[92] She has also urged for more developing county voice and participation in decision-making, including at the WTO.[92] The UNFPA has expressed regret that international migration, including issues such as diasporas and the brain drain, does not feature within MDG8.[95] Others have argued for more, and better, spending of ODA as both trends complement each other.[92]

The MDG Gap Task Force predicts that the downturn will galvanise action by providing "an opportunity to accelerate delivery on agreed commitments and improve the distribution of benefits where these are wanting".[93] Experiences so far, MDG8's lack of precision, and the unfolding consequences of the economic crisis suggest that this optimism is misplaced.

References

1 Ravallion M. World Bank's $1.25/day poverty measure: countering the latest criticisms, World Bank, 2010. http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:22510787~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html (accessed 20 July, 2010).

2 Fischer AM. Towards genuine universalism within contemporary development policy. Paper prepared for After 2015: promoting pro-poor policy after the MDGs. Brussels, June 2009.

3 Karshenas M. Global poverty: national accounts based versus survey based estimates. *Development and Change* 2003; **34**: 673–712.

4 Sala-i-Martin X. The world distribution of income: falling poverty and…convergence, period. *Quarterly Journal of Economics* 2006; **121:** 351–397.

5 UN. Indicators for monitoring the Millennium Development Goals. New York: UN, 2003.

6 FAO. The state of food insecurity in the world: economic crises—impacts and lessons learned. Rome: FAO, 2009.

7 von Grebmer K, Nestorova B, Quisumbing A, et al. Global Hunger Index: the challenge of hunger. Bonn, Washington DC, Dublin: IFPRI, 2009.

8 UN. The Millennium Development Goals report 2010. New York: UN, 2010.

9 World Bank.Global Monitoring Report 2009: a development emergency. Washington: World Bank, 2009.

10 UN. The Millennium Development Goals report 2009. New York: UN, 2009.

11 UNESCO. Education For All Global Monitoring Report 2010. Paris: UNESCO, 2010.

12 Lewin KM, Access to education in sub-Saharan Africa: patterns, problems and possibilities. *Comparative Education* 2009; **45:** 151–174.

13 Colclough C, Kingdon G, Patrinos H. The Pattern of Returns to Education and its Implications. RECOUP policy briefing 4, Cambridge: RECOUP, 2009.

14 Ainsworth M, Beegle K, Nyamete A. The impact of women's schooling on fertility and contraceptive use: a study of fourteen sub-Saharan African countries. *World Bank Economic Review* 1996; **10:** 85–122.

15 Vavrus F, Larsen U. Girls' education and fertility transitions: an analysis of recent trends in Tanzania and Uganda. *Economic Development and Cultural Change* 2003; **51:** 945–75.

16 Filmer D, Hasan A, Pritchett L. A Millennium Learning Goal: measuring real progress in education. Working Paper 97. Washington DC: Center for Global Development, 2006.

17 Pratham. Annual Status of Education Report. New Delhi: Pratham 2008.

18 Hanushek E, Woessmann L. The role of cognitive skills in economic development. *Journal of Economic Literature* 2008; **46:** 607–668.

19 Glewwe P. Schools and skills in developing countries: education policies and socioeconomic outcomes. *Journal of Economic Literature* 2002; **40:** 436–482.

20 Little AW, ed. Education for All and multigrade teaching: opportunities and challenges, Dordrecht: Springer, 2006.

21 Unterhalter E. 'Transnational visions of the 1990s: Contrasting views of women, education and citizenship'. In Arnot M, Dillabough J, eds. *Challenging democracy: International perspectives on gender, education and citizenship*. London: Routledge, 2000.

22 Unterhalter E. Gender, schooling and global social justice. London: Routledge, 2007.

23 Rai S. Gender and the political economy of development. Cambridge: Polity, 2002.

24 Reich MR. The politics of agenda setting in international health: child health versus adult health in developing countries. *Journal of International Development* 2006; **7:** 489–502.

25 Summers L. 'Foreword' In King EM, Hill MA, eds. Women's education in developing countries: barriers, benefits and policies. Baltimore: Johns Hopkins University Press, 1993; UNDP. Human development report. New York: Oxford University Press, 1990.

26 Abu-Ghaida D, Klasen S. The costs of missing the Millennium Development Goal on gender equity. *World Development* 2004; **32:** 1075–1107.

27 Unterhalter E. Situation analysis: partnership, participation and power for gender equality in education. Paper produced for the Egender Empowerment: Education and Equality (E4) Conference, Dakar 17–20 May 2010. http://www.e4conference.org/wp-content/uploads/2010/03/SituationAnalysis_EN.pdf (accessed 30 April, 2010).

28 Morley L, Lussier K. (2009). Intersecting poverty and participation in higher education in Ghana and Tanzania. *International Studies in Sociology of Education 2009;* **19:** 71–85.

29 Leathwood C, Read B. (2008) Gender and the changing face of higher education: a feminised future? Maidenhead: McGraw-Hill/Open University Press, 2008.

30 Grown C, Gupta GR, Kes A. Taking action: achieving gender equality and empowering women. UN Millennium Project, Task Force on Education and Gender Equality. London: Earthscan, 2005.

31 Grown C, Bahadur C, Handbury J, et al. The financial requirements of achieving gender equality and women's empowerment. Paper prepared for the World Bank, April 26, 2006. http://siteresources.worldbank.org/INTGENDER/Resources/GrownBahadurHandburyElsonFinancialRequirements.pdf (accessed 21 July 2010).

32 Buvinic M, Morrison A. Empowering women, boosting economies. Washington DC: World Bank, 2006.

33 Bakker I. Financing for gender equality and the empowerment of women: paradoxes and possibilities. New York: UN Division for the Advancement of Women, 2007.

34 Jansen JD. Targeting education: the politics of performance and the prospects of 'education for all'. *International Journal of Educational Development* 2005; **25:** 368–380. Ridge, N. Gender, education and development: global priorities and local realities. *AUCA Academic Review* 2008; **1:** 198–205.

35 King K, Rose PM.Transparency or tyranny? Achieving international development targets in education and training. *International Journal of Educational Development* 2005; **25**: 362–367.

36 Ridge N. Gender, education and development: global priorities and local realities. *AUCA Academic Review* 2008; **1:** 198–205.

37 Lancet (editorial). Gender equity is the key to maternal and child health. *Lancet* 2010; **375:** 1939.

38 Antrobus P. MDGs: Most Distracting Gimmicks? *Convergence* 2005; **38:** 49–52.

39 Barton C. Where to for women's movements and the MDGs? *Gender and Development* 2005; **13:** 25–35.

40 Kabeer N. Gender equality and women's empowerment: a critical analysis of the third Millennium Development Goal. In: Sweetman C, ed. *Gender and the Millennium Development Goals.* Oxford: Oxfam, 2005.

41 Chant S. Gender, generation and poverty: exploring the 'feminisation of poverty' in Africa, Asia and Latin America. Cheltenham: Edward Elgar, 2007.

42 DAW. Report of the Expert Group Meeting: the impact of the implementation of the Beijing Platform for Action on the achievement of the Millennium Development Goals. http://www.un.org/womenwatch/daw/egm/impact_bdpfa/EGM%20Report_BPFA-MDG_FINAL.pdf (accessed 30 April, 2010).

43 Ministry of Foreign Affairs, The Netherlands. Millennium Development Goals: MDG3 Fund. http://www.mdg3.nl (accessed 21 July 2010).

44 Ministry of Foreign Affairs of Denmark. MDG3 Global Call to Action. http://www.mdg3action.um.dk/en (accessed 21 July 2010).

45 Grant JP. The state of the world's children 1980-81. New York: UNICEF, 1980.

46 UNICEF. The state of the world's children 1996. New York: UNICEF, 1996.

47 Grant JP. Universal child immunization by 1990. *Assignment Children* 1985; **69:** 3–14.

48 Warren KS. Beyond universal childhood immunisation: Bellagio IV, *Lancet* 1990; **335:** 651–2.

49 Bellagio Study Group on Child Survival. Knowledge into action for child survival. *Lancet* 2003; **362:** 323–27.

50 Soucat A, Van Lerberghe W, Diop F, et al. Marginal budgeting for bottlenecks: a new costing and resource-allocation practice to buy health results. Washington DC: World Bank, 2002.

51 Black RE, Cousens S, Johnson HL, et al. Global, regional, and national causes of child mortality in 2008: a systematic analysis. *Lancet* 2010; **375:** 1969–1987.

52 UNICEF. Tracking progress in maternal, newborn, and child survival: the 2008 report. http://www.countdown2015mnch.org/reports-publications/2008report (accessed April 20, 2010).

53 National Statistics and Evaluation Office (NSEO) [Eritrea] and ORC Macro. *Eritrea Demographic and Health Survey 2002.* Calverton, Maryland: National Statistics and Evaluation Office and ORC Macro, 2003.

54 Rudan I, Chan KY, Zhang JSF, et al. Causes of deaths in children younger than 5 years in China in 2008. *Lancet* 2010; **375**: 1083–9.

55 Murray CJ, Laakso T, Shibuya K, et al. Can we achieve Millennium Development Goal 4? New analysis of country trends and forecasts of under-5 mortality to 2015. *Lancet* 2007; **370**:1040–54.

56 Victora CG, Huicho L, Amaral JJ, et al. Are health interventions implemented where they are most needed? District uptake of the integrated management of childhood illness strategy in Brazil, Peru and the United Republic of Tanzania. *Bull World Health Organ* 2006; **84:** 792–801.

57 Tottrup C, Tersbol BP, Lindeboom W, et al. Putting child mortality on a map: towards an understanding of inequity in health. *Trop Med Intl Hlth* 2009; **14:** 653–667.

58 Victora CG, Wagstaff A, Schellenberg JA, et al. Applying an equity lens to child health and mortality: more of the same is not enough. *Lancet* 2003; **362:** 233–41.

59 Mahler H. The safe motherhood initiative: a call to action. *Lancet* 1987; **329:** 668–70.

60 OECD DAC. Shaping the 21st century: the contribution of development cooperation. Paris: OECD, 1996.

61 Graham W, Bell JS, Bullough CHW. Can skilled attendance at delivery reduce maternal mortality in developing countries? *Studies in HSO&P* 2001; **17:** 97–129.

62 Campbell O, Graham W. Strategies for reducing maternal mortality: getting on with what works. *Lancet* 2006; **368:** 1284–1299.

63 Yates R. Universal health care and the removal of user fees. *Lancet* 2009; **373:** 2078–2081.

64 Cleland J, Bernstein S, Ezeh A, et al. Family planning: the unfinished agenda. *Lancet* 2006; **368:** 1810–1827.

65 UNIFEM. MDGs and gender. http://www.unifem.org/progress/2008/mdgsGender5.html (accessed April 15, 2010).

66 Hill K, Thomas K, AbouZahr C, et al. on behalf of the Maternal Mortality Working Group. Estimates of maternal mortality worldwide between 1990 and 2005: an assortment of available data. *Lancet* 2007; **379:** 1311–1319.

67 Hogan MC, Foreman KJ, Naghavi M, et al. Maternal mortality for 181 countries, 1980—2008: a systematic analysis of progress towards Millennium Development Goal 5. *Lancet* 2010; **375:** 1609–1623.

68 Shah I, Say L. Maternal mortality and maternity care from 1990 to 2005: uneven but important gains. *Reprod Health Matters* 2007; **15:** 17–27.

69 Countdown to 2015. Tracking progress in maternal, newborn and child health. http://www.countdown2015mnch.org/ (accessed July 21, 2010).

70 Tarantola D, Mann J. AIDS and human rights. *AIDS Soc* 1995; **6:** 1–5.

71 de Waal A. Reframing governance, security and conflict in the light of HIV/AIDS: a synthesis of findings from the AIDS, Security and Conflict Initiative. *Soc Sci Med* 2010; **70:** 114–20.

72 Piot P, Greener R, Russell S. Squaring the circle: AIDS, poverty and human development. *PLoS Med* 2007; **4:** 1571–5.

73 Vermund SH, Allen KL, Karim QA. HIV prevention science at a crossroads: advances in reducing sexual risk. *Curr Opin HIV AIDS* 2009; **4:** 266–73.

74 English M, Reyburn H, Goodman C, et al. Abandoning presumptive antimalarial treatment for febrile children aged less than five years: a case of running before we can walk? *PLoS Med* 2009; **6:** e1000015.

75 Mendis K, Rietveld A, Warsame M, et al. From malaria control to eradication: the WHO perspective. *Trop Med Int Health* 2009; **14:** 802–9.

76 Rusen ID, Harries AD, Heldal E, et al. Drug supply shortages in 2010: the inexcusable failure of global tuberculosis control. *Int J Tuberc Lung Dis* 2010; **14:** 253–4.

77 Dye C, Lönnroth K, Jaramillo E, et al. Trends in tuberculosis incidence and their determinants in 134 countries. *Bull World Health Organ* 2009; **87:** 683–91.

78 Ayles H, Schaap A, Nota A, et al. Prevalence of tuberculosis, HIV and respiratory symptoms in two Zambian communities: implications for tuberculosis control in the era of HIV. *PLoS One* 2009; **4:** e5602.

79 Corbett EL, Bandason T, Cheung YB, et al. Prevalent infectious tuberculosis in Harare, Zimbabwe: burden, risk factors and implications for control. *Int J Tuberc Lung Dis* 2009; **13:** 1231–7.

80 Samb B, Evans T, Dybul M, et al. An assessment of interactions between global health initiatives and country health systems.World Health Organization Maximizing Positive Synergies Collaborative Group. *Lancet* 2009; **373:** 2137–69.

81 Harries AD, Jahn A, Zachariah R, et al. Adapting the DOTS framework for tuberculosis control to the management of non-communicable diseases in sub-Saharan Africa. *PLoS Med* 2008; **5:** e124.

82 Makombe SD, Jahn A, Tweya H, et al. A national survey of the impact of rapid scale-up of antiretroviral therapy on health-care workers in Malawi: effects on human resources and survival. *Bull World Health Organ* 2007; **85:** 851–7.

83 UN Statistics Division. Official list of MDG indicators 2008. http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm (accessed 20 July 2010).

84 UNDP. Millennium Development Goals. Goal 7: Ensure environmental sustainability. http://www.undp.org/mdg/goal7.shtml (accessed April 15, 2010).

85 World Bank. Global Monitoring Report 2008: MDGs and the environment. Washington DC: World Bank, 2008.

86 UN. We can end poverty 2015. Millennium Development Goals. Goal 7: Ensure environmental sustainability. http://www.un.org/millenniumgoals/environ.shtml (accessed April 15, 2010).

87 Millennium Ecosystem Assessment. Ecosystems and Human Well-being: Synthesis. Washington: Island Press, 2005.http://www.millenniumassessment.org/documents/document.356.aspx.pdf (accessed 30 November, 2009).

88 Dalal-Clayton B, Bass S. (2009). The challenges of environmental mainstreaming: experience of integrating environment into development institutions and decisions. London: IIED, 2009.

89 Conway G, Waage J. Science and Innovation for Development. London: UK Collaborative on Development Sciences, 2010.

90 Annan K. We the peoples: the role of the United Nations in the 21st century. http://www.un.org/millennium/sg/report/full.htm (accessed 26 July 2010).

91 Hulme D. The making of the millennium development goals: human development meets results-based management in an imperfect world. Manchester: Brooks World Poverty Institute, 2007.

92 Fukuda-Parr S. Millennium Development Goal 8: indicators for international human rights obligations? *Human Rights Quarterly* 2006; **28:** 966–997.

93 UN MDG Gap Task Force. Strengthening the global partnership for development in a time of crisis. New York: UN, 2009.

94 Vandemoortele J, Malhotra K, Lim JA. Is MDG8 on track as a global deal for human development? New York: UNDP, 2003.

95 UNFPA. Potential contributions to the MDG agenda from the perspective of ICPD, Brasilia: UNFPA, 2007.