ELSEVIER
www.elsevier.com/locate/worlddev

*World Development* Vol. 41, pp. 19–30, 2013

0305-750X/$ - see front matter

http://dx.doi.org/10.1016/j.worlddev.2012.06.014

# How Should MDG Success and Failure be Judged: Faster Progress or Achieving the Targets?

SAKIKO FUKUDA-PARR
*The New School University, New York, USA*

JOSHUA GREENSTEIN
*The New School for Social Research, New York, USA*

and

DAVID STEWART *
*UNICEF, Uganda*

**Summary.** — This paper addresses the debate about the use of the Millennium Development Goals (MDGs) as performance measures in three ways. First we clarify the concept; like other global goals, the MDGs are benchmarks for gauging progress toward important objectives and should not be treated as planning goals. Second, when used as measures of national performance, the criterion of success should focus on the pace of progress rather than on achieving the targets. Third, we propose an alternative measurement method and find that with this metric, countries of Africa outperform global averages in progress to achieving the MDG targets.


*Key words* — poverty, millennium development goals, global goals, accountability, monitoring methodology, Africa

## 1. INTRODUCTION

Since their introduction in 2001, the UN, the World Bank, and other international organizations have monitored progress toward meeting the Millennium Development Goals (MDGs). These reports have become an important reference point for gauging the state of global poverty and development progress. However, a controversy has emerged about the MDGs as a reliable measurement framework. Clemens, Kenny, and Moss (2007) point out that the MDGs were "implausible" for a large number of countries. Easterly (2009) states that the Millennium Development Goals (MDGs) are "poorly and arbitrarily designed to measure progress."(p. 26). For Vandemoortele (2009), the MDGs are a "faulty yardstick for judging whether a country – or region-specific performances are on track. . .." (p. 356). All of these authors conclude that the MDGs give misleading measures of performance, and are biased against African countries, leading them to be dubbed as "false failures" (Clemens *et al.,* 2007; Easterly, 2009), and contribute to Afro-pessimism (Vandemoortele, 2009, p. 356).

These authors attribute this problem to the misuse of MDGs as performance measures applied to countries. Vandemoortele, a former UN official who had played a major role in devising the goals, explains that the purpose of the goals was not for each country to achieve them, but to "encourage all countries to strive for accelerated human development" (2009, p. 359). Easterly notes that while MDGs were intended to be a "*motivational device* to increase development efforts in and on behalf of poor countries" (p. 26 – emphasis ours), they are used as *measures of performance* (p. 26) and inevitably used to judge whether a country has succeeded or failed. He writes "The statement that 'Africa will miss all the MDGs' . . . has the unfortunate effect of making African successes look like failures" (p. 26), even if the intent was to show how much needs to be done and to mobilize more effort. Clemens *et al*. propose that the goals should be reinterpreted, not as real targets to be achieved but a description of "the kinds of outcomes toward which the development community should strive" (p. 747).

These authors imply that the MDGs should not be used as performance measures and do not consider alternative measurement methods that would avoid the unintended and counter-productive consequences of a biased metric. Abandoning performance measurement would undermine a major objective of the MDGs which is not only to create incentives but also to strengthen accountability. The special value of MDGs is that they set quantitative and time bound targets which makes possible rigorous performance monitoring of commitments made by world leaders to end absolute poverty. That was the main reason why the MDGs were welcomed by the international community when they were introduced; they went beyond stating general objectives, making possible more evidence based debates about international development policies and efforts. The MDGs have no doubt come to dominate international development debates because they respond to the greater demand from the public and politicians for "results based management" in development aid ( Hulme, 2010). They are particularly important in an international aid environment where ex-ante policy conditionality of the 1980s has been replaced with ex-post reward for good policy. Thus, IMF and World Bank country economic development reports consistently include data on MDG performance. Thus performance

* The authors are grateful for comments on earlier versions from Degol Hailu, Isabel Ortiz, four anonymous reviewers, and participants in the New School workshop on MDGs in June 2011. The authors are responsible for all errors and omissions. Final revision accepted: June 19, 2012.

monitoring then is a central function of MDGs, not just an accidental, unintended use. But if the MDGs are to be effective in this role, the method of determining progress, or a lack thereof, must be the correct one. It is then important to have the right concept of the goals, the criteria of success and failure, and methodology for measuring performance.

As outlined later in the paper there are numerous critiques of the MDGs as globally set norms. The purpose of this paper is to clarify the concept of MDGs as benchmarks for gauging progress toward normative objectives, not as planning targets and to propose a consistent measurement method; what is their objective and how should they be utilized, and how should progress be measured? We propose an alternative framework for measuring MDG performance, and carry out an empirical analysis of country performance. We first consider the concept of MDGs as a policy tool, and then review the current framework. We then propose an alternative approach and show empirical findings from the alternative approach. These depart significantly from the current method and demonstrate that the assessment of Africa as a failure is indeed a myth. We aim to contribute not only to correcting the use of MDGs in international monitoring of human development and poverty reduction, but also more broadly to a better understanding of global goals as an international policy instrument.

## 2. MDGS AS PERFORMANCE MEASURES: PLANNING TARGET OR BENCHMARKS

There are several possible approaches measuring progress against the goals. The consensus method used by international monitoring reports which we refer to as the "achieving the target" method judges success and failure by whether the target is achieved, and measures the level of achievement. Using targets in this way treats global goals like national planning targets. The MDGs are global goals which are a policy instrument used by the UN to draw attention to urgent but neglected global priorities (Jolly, 2004). They can be used in two ways: first as benchmarks in monitoring progress toward important objectives; and second to communicate an important normative objective based on shared values (Fukuda-Parr, 2010). It is also used as a hard planning target to be achieved at global, regional, or subnational levels. However, this use is inconsistent with the MDG concept; they were neither set through a technocratic planning process nor at the national level but emerged from a global process of norm setting.

MDGs derive from the Millennium Declaration, adopted by the 2000 General Assembly, in which world leaders committed to ending human poverty[1] along with peace and security, democracy, and human rights as the key priorities for the 21st century. It was a strong political consensus, adopted by the largest ever gathering of heads of state and government. The purpose of the Declaration is normative, to articulate a consensus vision of what the world *should* strive toward. The MDGs were introduced in the following year, in the "Road Map" report by the Secretary General (UN, 2001) that provided a plan for implementing the Declaration. The MDGs thus grew out of a political process that set out *normative objectives,* a consensus on what the world *should* look like. They were not engineered as planned targets.

Yet it would be too quick to conclude that the MDGs are in themselves normative goals. Some of the MDG critics interpret them as aspirational goals (Clemens *et al.,* 2007) ignoring that they were developed for implementing the Millennium Declaration. According to the "Road Map" (UN, 2001, p. 56 para 1) their principal purpose was to "harmonize reporting on the Millennium Declaration", so to strengthen the performance reporting process. This was necessary because while the Millennium Declaration included some quantitative targets, they were too loosely expressed to be used for reporting. MDGs made the commitments monitorable by structuring and elaborating them with the necessary timelines and indicators. For example, the Declaration states: "we resolve ….to halve the proportion of people whose income is less than one dollar a day by 2015" (UN, 2000, para 19) without stating the starting year. So the MDGs restated this to "halve, between 1990 and 2015, the proportion of …" (UN, 2001, p. 56). Moreover the MDGs introduced a nested structure of goals, each of which has a handful of targets, each of which in turn has at least one indicator. These are indicators with international data series that can be used to determine progress at country levels, aggregated and compared. Thus the MDGs are neither hard planning targets set through a technocratic, national planning process, nor normative objectives. They are best treated as benchmarks for monitoring progress in implementation of normative commitments made by world leaders in the 2000 Millennium Declaration.

## 3. CURRENT FRAMEWORK FOR MEASURING PROGRESS: ACHIEVING THE TARGET

The standard procedure used in official monitoring reports has been to assess current achievement level for each indicator in relation to the defined target. Either 1990 data are compared to the most recent data directly to determine if improvement has occurred, or extrapolations of 1990 to present trends are used to determine if the world or a specific region or country is "on track" to meet the mark by 2015.

These reports are dominated by the question of whether countries or regions are on track to achieve the targets. Conversely, there has been scant if any assessment of whether the goals have coincided with a faster pace of progress. The UN's 2009 "The Millennium Development Goals Report" ( UN, 2009) focuses almost exclusively on the question of target achievement by 2015. If the policy objective of the MDGs was to encourage greater effort and coherence, the relevant question is whether in fact progress is being achieved at a faster pace. For most indicators, improvement is judged using the 1990 data as a baseline. In some instances, data from 2000 are also included to "show progress since the Declaration was signed" (UN, 2009, p.54). However, there is virtually no attempt to compare pre-1990 trends with post-1990 trends in the indicators, or 1990–2000 trends with post-2000 trends. This pattern holds true even for indicators for which a 2000 data point is included. For example, the report notes that total deforestation was lower from 2000–2005 than it was from 1990–2000, but includes only average annual total net loss for each period, with no indication of the year to year trend during these periods, or whether there was a shift in the annual change beginning in the second period (UN, 2009, p. 43).

This approach holds for indicators that are perceived as successful as well as those perceived as failing. For example, it is reported that the goal concerning percentage of population with access to drinking water is on track to be met. Significant improvement in this indicator is illustrated by comparing regional 1990 and 2006 statistics (UN, 2009, p. 46). This improvement is undoubtedly good news, but there is no comparison with pre-1990 trends, nor any indication of how the rate of change has evolved over the 1990–2006 period. Similarly, the report states that the world is not on pace to meet

the universal primary education goal by 2015, although the rate of school enrollment has been improving. This improvement is shown by a comparison between worldwide and regional 1999 and 2006 data (UN, 2009, p. 14). There is no discussion of how this improvement compares to historical trends, or whether the rate of improvement has been changing during the most recent period. The report indicates that the goal is not likely to be met, but not whether there had been a post- MDG declaration improvement in enrollment.

The World Bank's "Global Monitoring Reports" also discusses the MDGs as hard targets. Much of the focus of the report is on whether the goals at the country, regional, or global levels are "on track" to be achieved by 2015. A graph in the 2009 report illustrates, for each goal, the percentage of countries that have "achieved" the goal, that are "on track," "off track," and "seriously off track" (World Bank, 2009, p. 14). Another graph compares the current global levels of the first seven indicators with the required levels for these indicators to be on track for 2015 (World Bank, 2009, p. 16). Discussion of relative success or difficulties concerning each goal focuses on absolute achievement rather than any change in trend. For example, the goal for poverty reduction is considered "in reach" largely due to "strong economic growth in developing countries in the past decade" (World Bank, 2009, p. 13). The Bank also reports that the goals for gender parity in primary and secondary education, as well as the goal for access to safe water, are on track to be met on the global level (World Bank, 2009, p. 15). Progress on child mortality in developing countries is deemed "insufficient" to meet the 2015 goals after an examination of the 1990 and 2006 statistics (World Bank, 2009, p. 19). There is no inquiry into whether there has been a post-MDG change in trends regarding any of these indicators. In an annex entitled "Monitoring the MDGs" the Bank does provide graphs with trend lines from 1990 to 2006 for selected indicators alongside its 1990 and 2006 absolute level comparisons. However, even here, the graph is only used to compare the actual trend with the trend line that would be required to meet the goal (World Bank, pp. 203–219). The focus remains on whether the goal will be met by 2015 and the question of changes in the pace of progress remains unasked. The fixation on the goals as targets is clearly illustrated when, after providing some genuinely disheartening statistics regarding hunger, school enrollment, and other issues, the report makes the seemingly tautological observation that these are "numbers that would be far lower if the world were on track on the MDGs" (World Bank, 2009, p. 4).

Regional banks such as the Asian and African development banks use similar methodologies (ADB, 2007; African Development Bank, 2009). The Asian Development Bank's (ADB, 2007) "The Millennium Development Goals Progress in Asia and the Pacific" is devoted to "identifying which countries are on or off track for specific MDG targets." (ADB, 2007. p. 3) The report divides countries into four categories, "early achiever"-already achieved 2015 target, "on track"-expected to meet target, "off track-slow"-expected to meet the target, but not by the 2015 deadline, and "off track-no progress, regressing." Countries are placed in these categories based on the trend since 1990 (ADB, 2007, p. 3). If the goals are to be met, what is necessary is "for many countries is to break away from the predicted path." (ADB, 2007, p. 3) Whether the "early achievers" or "on track" countries have broken away from previous paths during the 1990–2007 period is once again left unexamined. The African Development Bank's "Assessing Progress in Africa toward the Millennium Development Goals" similarly examines the relative success of the goals almost exclusively by comparing absolute about 1990 levels with absolute present levels for individual countries. In some cases, 1990–2005/6 trends are the method of choice, but a comparison of pre and post Millennium Declaration trends is not attempted. Not a single UN report that monitors MDG implementation uses alternative approaches, focusing on progress rather than level, and using the goals as benchmarks.

### (a) *Critique of the MDGs as national planning targets*

Measuring progress in MDGs as planning targets framework has given rise to sharp criticisms and controversies. These include: the arbitrary nature of how the individual goals are defined; the bias to Africa and other countries with low starting points; the infeasibility of reaching the goals for many countries; and the applicability of the targets to countries rather than the world as a whole.

Saith (2006) has pointed out numerous flaws in the list of goals, targets and indicators for their concepts, and data availability that undermine their potential use as programing tools. Easterly (2009), already referred to, explains that there are several different ways that these targets could have been defined, by absolute or percentage changes, change targets *versus* level targets, and by positive or negative indicators. All of these choices have ramifications on the likelihood of the goals being met. The choices were not consistent, and the logic behind how each goal was defined is not always clear. But more importantly, these arbitrary choices have resulted in bias against Africa in that African nations are less likely to meet the goals, and so will be dubbed failures. Vandemoortele (2009) points out that previous UN targets were expressed in absolute values, not proportional terms, and differentiated among groups of countries. For example, in 1980 a 2000 target was set to reduce infant mortality to 120 per 1000 live births in the poorest countries and to 50 in all others (p. 362). Earlier publications had made similar points that relate to the inverse relationship between the likelihood of MDG achievement and level of starting point (UNDP, 2003, Jolly, 2003).

Another controversy has arisen around different types of constraints that make achievement of MDGs difficult including macroeconomic, technical and managerial, and institutional and policy constraints. Gupta, Powell, and Yang (2005) at the IMF have warned that the "scaling up" of aid flows necessary to finance interventions to achieve the MDGs would lead to macro-economic imbalances, notably an upward pressure on the currency exchange or Dutch disease.[2] For Clemens *et al.* (2007) the goals are inherently implausible due to their poor design (p. 736). For example, in order to halve poverty the average African country would require per capita GDP growth of 7% for 15 years. In the 15 years previous to the MDG implementation, 1985–2000, only five countries in the entire world averaged GDP growth that high (p. 739).

Another controversy concerns whether the goals were intended to apply to the world as a whole or to each country. Vandemoortele (2009) argues that the targets should not be applied globally since the targets and timelines were set by extrapolating global trends. Earlier global goals were explicit in stating that the goals were intended for the world, but the 2000 Declaration and the 2001 Road Map document are silent on this point, leaving the question open to conflicting interpretations. The UN itself is not always consistent, at once encouraging country adaptation.[3] but monitoring and reporting on their target achievement, and assisting countries in costing resource requirements to achieve them.[4]

There are clearly serious problems with treating the MDGs as planning targets applied to countries and regions. This is

not surprising since the goals were not set through national planning processes that take account of priorities, feasibility, resources, and necessary tradeoffs. They grew out of a normative process of political negotiations and consensus building among world leaders. They were clearly not intended by their creators to be national planning targets. They were not defined as targets for countries and regions but for the world. When used as hard targets, they give rise to all the criticisms of methodology in setting the goals and feasibility as reviewed above.

Clearly, a new framework for measuring performance is needed. Rather than fixating on the achievement of a specific level, it may be more revealing to examine if the commitments made by world leaders have had any effect on the pace of poverty eradication. Using the MDGs to monitor implementation of commitments made in the 2000 Declaration should ultimately be about finding out whether MDGs have been effective in changing policy, resources, efforts, and outcomes.

## 4. ALTERNATIVE FRAMEWORK: MDGS AS BENCHMARKS

We therefore propose an alternative framework, treating MDGs as benchmarks of progress, where performance is evaluated by asking whether the pace of progress has improved since the 2000 commitments, and whether it is adequate when compared with the benchmark targets. We present the results of an empirical analysis of country-level trends since 1990, estimating the pace of change and its change after the adoption of the MDGs.

Our methodology compares the rate of progress before and after the Millennium Declaration as follows: for each country $i$, for each indicator $X$, and each time period A and B:

$$[\Delta X_i/\Delta T_i]_{\mathrm{A}} > [\Delta X_i/\Delta T_i]_{\mathrm{B}}$$

where:

$$\Delta X_i = X(T_{i,\mathrm{end}}) - X(T_{i,\mathrm{start}})$$

More specifically, the two rates of change compared were $(X_{\mathrm{MID}} - X_{\mathrm{FST}})/(T_{\mathrm{MID}} - T_{\mathrm{FST}})$ and $(X_{\mathrm{LST}} - X_{\mathrm{MID}})/(T_{\mathrm{LST}} - T_{\mathrm{MID}})$, where $T_{\mathrm{FST}}$ = earliest possible year to 1990, $T_{\mathrm{MID}}$ = 2000–2003, $T_{\mathrm{LST}}$ = most recent available year.

$X_{\mathrm{FST}}$ = first year indicator value, $X_{\mathrm{MID}}$ = second year indicator value, and $X_{\mathrm{LST}}$ = third year indicator value. This formula was used to calculate and compare the average rates of change for each period, for each country and indicator, as described above.

While this method of comparing absolute changes as linear phenomenon is admittedly fairly simple, the official UN and World/Regional Bank documents attempting to project whether countries or regions are on track for the goals often use very similarly simple methods. The use of such methods by official reports does not, of course, imply that they are in fact the best way to understand change along these indicators. However, by using nearly identical methods of measurement to find very different results, we illustrate the importance of how success or failure is defined. As in our analysis, the projections for increasing indicators used in official reports (indicators in which a higher level is better) are based on a linear model of the average rate of change between two data points, from the earliest possible year going back to 1990 and the most recent available year.

The formal formula used by the ADB for estimating trends for increasing indicators in their report on the MDGs progress in Asia, using the same symbols as above for easier comprehension, is given as:

$$X_{\mathrm{LST}} = X_{\mathrm{FST}} + q(T_{\mathrm{LST}} - T_{\mathrm{FST}})$$

where:

$$q = (X_{\mathrm{LST}} - X_{\mathrm{FST}})/T_{\mathrm{LST}} - T_{\mathrm{FST}}).$$

Predictions on when the goals will be met are then made by keeping this rate of change constant and extrapolating into the future. The essential difference between these calculations and our own is that these formulas only calculate one rate, from the earliest possible year since 1990 to the most recent year, where we have added a middle year and calculated the rate of change for two periods for the purposes of comparison.

For decreasing indicators (indicators in which a lower level is better) the ADB does use a slightly more complex formula:

$$X_{\mathrm{LST}} = X_{\mathrm{FST}}(1 + r)(T_{\mathrm{LST}} - T_{\mathrm{FST}})$$

where "$r$" represents the average growth rate between $T_{\mathrm{FST}}$ and $T_{\mathrm{LST}}$, calculated as a slope which decreases at a decreasing rate. This log-linear method takes into account that indicators will often improve at decreasing rates. This is a step that we have not taken in our calculations at this point. For this round of calculations, we have also treated decreasing indicators as linear. We address this issue more fully in our section on child mortality.

The other common method of evaluating progress in the UN's 2009 report consists mainly of direct comparisons between the absolute level aggregate regional or world data for several different years; for example, a direct comparison during 1990–2007 levels to determine if there has been improvement. The method is described simply as using aggregate regional figures, with the 1990 figures as a baseline, to "track advances over time." (UN, 2009, p. 54) This use of absolute level comparisons as a basis for measuring progress is also consistent with our methodology.

The analysis covers all indicators, totaling 25, and countries of the world for which sufficient data are available. [5] Since new policies take time to implement, and to have an effect, we have tried to allow for one year of lag time and used 2003 as the cut-off year defining two periods. The source of all data was the Official United Nations Site for the MDG Indicators ( UN, 2010). In addition to these rates of changes, the percentage of countries with absolute improvement from 1990, or the earliest possible year after 1990, to most recent data was calculated for each indicator.

## 5. FINDINGS

### (a) *MDG as incentive—improving pace of progress?*

A summary of our provisional findings is presented in Table 1 that shows the proportion of countries that made faster progress since the MDGs were introduced. We found improved performance by the majority of countries (over 50%) for just five of the 24 indicators analyzed [6]: population below $1 a day income, employment to population ratio, debt service, slum population as percentage of urban population, and seats held by women in national parliament. We therefore conclude that there is no convincing evidence of a marked post-MDG acceleration of improvement in reducing human poverty for the world's countries as a whole.

Our measurement method also tells a different story when compared with the conventional method. For example, the clean water goal has been one that has been touted as an MDG success. UN reported that the world was on path to meet the target "ahead of schedule." (UN, 2009, p. 45) This conclusion was reached using a regional comparison of 1990

Table 1. *Have countries achieved faster pace of progress since the MDGs?*

| Goal | Indicator | Total countries for which data were available | % Countries showing improved rate in post MDG period (%) | % Countries showing overall improvement in first to last year (%) |
|---|---|---|---|---|
| 1 | Employment to Population ratio, both sexes, percentage | 177 | 64 | 56 |
| 1 | Population Below $1 per day, (PPP), Percentage | 51 | 51 | 55 |
| 1 | Growth Rate of GDP per Person Employed, Percentage | 163 | 42 | 62 |
| 2 | Total Net Enrollment Ratio in Primary Education, Both Sexes | 135 | 35 | 68 |
| 3 | Seats held by women in national parliament, percentage | 180 | 50 | 82 |
| 3 | Gender Parity Index in Primary Level Enrollment | 179 | 46 | 48 |
| 3 | Gender Parity Index in Secondary Level Enrollment | 166 | 47 | 48 |
| 3 | Gender Parity Index in Tertiary Level Enrollment | 115 | 47 | 80 |
| 3 | Share of women in wage employment in non-agricultural sector | 106 | 37 | 73 |
| 4 | Children 1 year old immunized against measles, percentage | 191 | 46 | 73 |
| 4 | Children under 5 mortality rate per 1000 live births | 194 | 32 | 96 |
| 4 | Infant Mortality Rate 0–1 year per 1000 live births | 194 | 29 | 95 |
| 5 | Births attended by skilled health personnel, percentage | 87 | 49 | 72 |
| 5 | Current contraceptive use among married women, ages 15–49, any method, percentage | 59 | 24 | 85 |
| 6 | People Living with HIV 15–49 years old, percentage | 142 | N/A | 20 |
| 6 | Tuberculosis detection rate under DOTS | 174 | 49 | 67 |
| 6 | Tuberculosis death rate per year per 100,000 population | 210 | 44 | 69 |
| 6 | Tuberculosis prevalence rate per 100,000 population | 210 | 33 | 78 |
| 6 | Tuberculosis incidence rate per year per 100,000 population | 210 | 28 | 60 |
| 7 | Slum population as percentage of urban, percentage | 91 | 76 | 79 |
| 7 | Carbon Dioxide Emissions, metric tons CO2 per capita, (CDIAC) | 208 | 46 | 37 |
| 7 | Proportion of the population using improved drinking water sources, total | 126 | 34 | 78 |
| 7 | Proportion of the population using improved sanitation facilities, total | 153 | 34 | 61 |
| 7 | Terrestrial and marine areas protected to total territorial area, percentage | 216 | 6 | 72 |
| 8 | Debt service as percentage of exports of goods and services and net income | 111 | 65 | 76 |

*Source:* Author calculations based on data from UN Statistical Division *Millenium Development Goals Indicators* (2010).

and 2006 percentages (UN, 2009, p. 45). But this finding says little about whether countries are making additional effort. Our finding does confirm that there is good progress being made since 78% of the 126 countries examined showed improvement since 1990. However, the MDGs did not seem to make much difference to national efforts as only approximately one third of them achieved a faster pace of improvement post-MDGs. It is surely positive that the world is on its way to providing access to clean water to all of its inhabitants, but the extent to which this positive news is related to the MDGs is anything but clear, nor is whether world leaders are living up to their 2000 commitment to do their utmost. Similar patterns are observable for several other indicators. For example, for the Births attended by skilled health personnel indicator, 72% of the countries included have improved since 1990. However, less than half have shown any acceleration since MDG implementation. In fact, of the 24 indicators for which this type of comparison can be made, there are only two in which this method of calculation does not produce a "worse" result. This disparity clearly illustrates why the use of 1990 as a baseline is problematic. More disturbingly, there are actually a significant number of countries in which there has been a regression along these indicators when compared to 1990 absolute levels. At least a third of countries have shown no improvement or regression in 12 indicators. However, even for indicators along which many countries have been improving since 1990, if they have not been improving at accelerated rates since implementation, it must be asked to what extent the MDGs, intended to be a policy tool to encourage action, have had real impact on achieving faster progress.

### (b) *MDGs as a performance measure*

How have countries performed in living up to the commitment to end poverty? We compared the results of our analysis with the scores given by the UNDP's MDG monitor and the World Bank's Global Monitoring Reports. The UN Monitor rates country performance by four scores: (i) achieved; (ii) on track to achieve the goal; (iii) possible to achieve with changes; and (iv) off track. The World Bank Report (World Bank, 2011) uses three scores: (i) on target; (ii) close to target; and (iii) far from target. As assessments of country performance, these scores send a message of success and failure, and coming from international organizations, they send a message about whether policies of countries are working. While the first tier scores are clearly positive endorsements, the other last two scores label performance as "lagging", despite the somewhat positive phrasing that is used. The UN's off track and "possible to achieve the goals with changes" express optimism but in fact are negative assessments, implying that policies and efforts require change. The World Bank's "far from the target" and "close to target" are less explicit but also imply need for change. These terms may be intended to encourage greater effort, but when MDGs are used as a performance measure, anything that falls short of achieving the target would not be considered a "success" and therefore be interpreted as a sign of shortcomings, and a failure.

For purposes of comparison, we categorized the results of our progress method into three groups: (i) positive progress over the entire period, including those where progress showed improvement over the pre-MDG period; (ii) stagnating over

Table 2. *MDG performance evaluation: results of alternative methods*

| Goal or indicator | Authors' progress method (% countries)<br><br>– Progress<br>– Stagnation<br>– Regress | Achieving the target method – UNDP MDG monitor (% countries)<br><br>– Achieved and on track<br>– Possible to achieve with changes<br>– Off track | Achieving the target method – World Bank global monitoring report (% countries)<br>– On target<br>– Close to target<br>– Far from target |
|---|---|---|---|
| Goal 1: Halve proportion of people with less than $1/day income | 39 | 54 | 64 |
| | 49 | 38 | 11 |
| | 12 | 8 | 24 |
| Goal 4: Reduce by ¾ Under-5 mortality rate | 64 | 41 | 26 |
| | 34 | 31 | 38 |
| | 2 | 16 | 35 |
| Goal 7: Proportion of population using improved water source | 46 | 25 | 49 |
| | 49 | 54 | 31 |
| | 5 | 22 | 2 |

*Source:* Author calculations based on data from UN Statistical Division *Millenium Development Goals Indicators* (2010), UNDP *MDG Monitor* (2011), and The World Bank *Global Monitoring Report* (2011).

the entire period; (iii) regressing over the period. Our last two categories, stagnating and regressing, are clearly red flags signaling inadequate performance that require serious attention.

We compared the results for three of the indicators that have best data coverage: goal 1 on extreme poverty indicator $1 a day poverty rate; goal 4 indicator under-five mortality rate; and goal 7 indicator on access to clean drinking water. The results are summarized in Table 2. Our approach comes to quite different conclusions from the conventional methods. For the extreme poverty target, our measure shows 61% of the countries are either stagnating or have been regressing over the entire reporting period. But the conventional method tells a less alarming story with only 8% off target and 38% possible to achieve the goal with some changes according to the UN, and 24% far from the target and 11% close. For improved water, our evaluation found 54% of the countries had stagnated and made little improvement. According to the World Bank, 20% are far from the goal while 31% are close. According to the UN, 22% are "off track" while 54% are considered "possible to achieve with changes". The ambiguous language of the middle scores underplays the serious problem, that despite the ambitious commitments made in 2000, little progress is being made in a large number of countries. Similarly, with respect to child mortality, our methodology finds 36% of the countries stagnating or regressing. According to the conventional method, the World Bank finds 35% are "far from the goal", and 38% are close, while the UN finds 16% are off track and another 41% are "possible to achieve with changes".

These contrasts highlight the ambiguous language of the scores given by achieving the target measure. The language is intended not to discourage lagging countries. But the scores are inevitably interpreted as performance measures and anything but "on track" would imply a need for shift in policy and level of effort. Our approach estimates the pace of improvement, and clearly identifies if there has been stagnation or reversal.

### (c) *sub-Saharan Africa and least developed countries (LDCs)—faster progress*

We repeated these analyses for sub-Saharan African countries and for LDCs alone. Our results reveal more positive results for both post-MDG change and overall progress, outperforming global averages. In stark contrast to the consensus metric that depicts Africa as a failure for missing the goals, countries of this region are disproportionately represented among the biggest improvers.

Tables 3 (sub-Saharan Africa) and 4 (LDCs) show the majority of countries showing post MDG acceleration of progress for 16 indicators among sub-Saharan African countries and 13 indicators among the LDCs. These groups of countries are consistently outperforming global averages. For example, 80% of sub-Saharan African countries with data achieved faster progress in reducing extreme income poverty compared with 51% global average, 63% of countries in under-five mortality compared with 32% global average, and 39% of countries for access to improved drinking water compared with the 34% global average.

We then considered whether sub-Saharan African countries were outperforming other countries in improving progress. Countries of this region were the top 10 improvers for population below $1 a day, eight out of the top 10 for total primary enrollment, five out of the top 10 for under five mortality, and five out of 10 for under five children underweight, were all sub-Saharan African countries. We then ranked according to those showing improvement post-MDGs by the highest number of indicators. As shown in Table 5, listing countries by the number of indicators in which they showed improvement, the top six countries were from the region—Nigeria, Ethiopia, Burkina Faso, Uganda and Rwanda, and Zambia, each of which showed improvement across 13–16 indicators, and 12 out of the top 20 were from the region.

### (d) *sub-Saharan Africa—performance*

With respect to country performance, our metric tells a very different story than the "off-track" failure story of the official reports. Progress has been achieved since 1990 in 100% of the region's countries when data were compared with the world average of 39% with respect to the reducing proportion of population with incomes below %1 a day. Africa outperforms world averages for the other three indicators also: 73% compared with 64% for reducing under-five mortality; 57% compared to 46% for access to water. In contrast, the UN and

Table 3. *Have sub-Saharan African countries achieved faster progress since the MDGs?*

| Goal | Indicator | Total SSA countries available | % Showing improved rate in post MDG period (%) | % Showing overall improvement in first year to last year (%) |
|---|---|---|---|---|
| 1 | Population Below $1 per day, (PPP), Percentage | 5 | 80 | 100 |
| 1 | Growth Rate of GDP per Person Employed, Percentage | 43 | 37 | 79 |
| 1 | Employment to Population ratio, both sexes, percentage | 46 | 57 | 39 |
| 2 | Total Net Enrollment Ratio in Primary Education, Both Sexes | 31 | 52 | 87 |
| 3 | Seats held by women in national parliament, percentage | 47 | 55 | 85 |
| 3 | Gender Parity Index in Primary Level Enrollment | 43 | 56 | 70 |
| 3 | Gender Parity Index in Secondary Level Enrollment | 37 | 46 | 81 |
| 3 | Gender Parity Index in Tertiary Level Enrollment | 23 | 52 | 83 |
| 3 | Share of women in wage employment in non-agricultural sector | 6 | 17 | 100 |
| 4 | Infant Mortality Rate 0–1 year per 1000 live births | 48 | 54 | 85 |
| 4 | Children under 5 mortality rate per 1000 live births | 48 | 63 | 88 |
| 4 | Children 1 year old immunized against measles, percentage | 48 | 65 | 73 |
| 5 | Current contraceptive use among married women, ages 15–49, any method, percentage | 22 | 27 | 91 |
| 5 | Births attended by skilled health personnel, percentage | 27 | 48 | 67 |
| 6 | Tuberculosis detection rate under DOTS | 42 | 57 | 57 |
| 6 | Tuberculosis prevalence rate per 100,000 population | 48 | 50 | 44 |
| 6 | Tuberculosis death rate per year per 100,000 population | 48 | 56 | 21 |
| 6 | Tuberculosis incidence rate per year per 100,000 population | 47 | 49 | 13 |
| 6 | People Living with HIV 15–49 years old, percentage | 45 | N/A | 49 |
| 7 | Proportion of the population using improved drinking water sources, total | 44 | 39 | 86 |
| 7 | Proportion of the population using improved sanitation facilities, total | 44 | 52 | 82 |
| 7 | Slum population as percentage of urban, percentage | 38 | 79 | 79 |
| 7 | Terrestrial and marine areas protected to total territorial area, percentage | 47 | 11 | 57 |
| 7 | Carbon Dioxide Emissions, metric tons CO2 per capita, (CDIAC) | 48 | 40 | 44 |
| 8 | Debt service as percentage of exports of goods and services and net income | 39 | 59 | 85 |

*Source:* Author calculations based on data from UN UN Statistical Division *Millenium Development Goals Indicators* (2010).

the World Bank report a more negative story of African performance overall, and underperforming in comparison to other regions. For income poverty, only 25% of the region's countries are "on track" according to the UN and 40% "on target" according to the World Bank and these compare with higher world averages of 54% and 64%. For child mortality, only 26% are "on track" (UN) and 4% "on target" (World Bank), compared to world averages of 41% (UN) and 26% (World Bank). For access to drinking water, only 14% are "on track" (UN), and 33% are "on target" (Word Bank) (Table 6).

When we consider which countries performed best by the absolute pace of improvement, and by consistent improvements across several indicators, some of the strongest performing countries in the world are from this region. We ranked countries by the size of improvement and reviewed the number of indicators for which the countries appeared among the top 15. African countries were among the top performers. For example, they were nine out of 15 top countries with the largest improvements in total primary enrollment, eight out of top 15 for children underweight and births attended, and 13 out of the top 15 improvers for child mortality. Many African countries were top performers across a range of indicators, see Table 7 below.

The contradictions between the "success" by the progress criteria and "failure" by the target achievement criteria are most graphically illustrated when examining individual countries. It is clear that some of the best performers in this perspective are not viewed as such by the UN monitor. For example, Mali, Senegal, and Ethiopia are all listed as "possible to achieve with some changes" for goal 1, despite all three being in the top 10 improvers for $1 a day poverty. Consider Mali, a country that had a $1 a day poverty rate of 86% in 1994, and had lowered this rate to a little more than 50% by 2006. The average annual rate of improvement of almost three percentage points per year was one of the best rates measured. Senegal and Ethiopia reduced their income poverty rates from 65% to 33% and from 60% to 39%, respectively. Mozambique nearly doubled its total primary enrollment from just over 40% to close to 80% over the last two decades. Yet none of these countries are considered "on track" for these relevant goals. The implication is that they need to shift policies and effort. All countries can improve policy effectiveness, but in the context of an international aid architecture that rewards good performance, the message that comes from the MDG assessment is misleadingly negative for such countries.

Much of the official literature highlights the gaps to achieve the MDG, and misses what may be a positive story for Africa, and a negative story for other regions. The UN MDG report does note that the sub-Saharan Africa's primary school enrollment has increased by 15% since 2000 (UN, 2009, p. 15). The comparison is made between absolute levels in 2000 and 2007 but with no discussion of whether this improvement is a departure from previous regional trends and no national level statistics. The World Bank predicts that the world will most likely not meet the goals involving primary education, specifically citing "sizable shortfalls" in sub-Saharan Africa as one contributing factor to this failure (World Bank, 2009, p. 19). Does

Table 4. *Have LDCs achieved faster progress since the MDGs?*

| Goal | Indicator | Total LDCs for which data are available | % Showing improved rate in post MDG period (%) | % Showing overall improvement first year to last year (%) |
|---|---|---|---|---|
| 1 | Population Below $1 per day, (PPP), Percentage | 6 | 67 | 100 |
| 1 | Growth Rate of GDP per Person Employed, Percentage | 40 | 45 | 65 |
| 1 | Employment to Population ratio, both sexes, percentage | 44 | 55 | 48 |
| 2 | Total Net Enrollment Ratio in Primary Education, Both Sexes | 29 | 45 | 86 |
| 3 | Seats held by women in national parliament, percentage | 44 | 59 | 80 |
| 3 | Gender Parity Index in Primary Level Enrollment | 42 | 57 | 76 |
| 3 | Gender Parity Index in Secondary Level Enrollment | 36 | 50 | 83 |
| 3 | Gender Parity Index in Tertiary Level Enrollment | 18 | 67 | 78 |
| 3 | Share of women in wage employment in non-agricultural sector | 3 | 0 | 67 |
| 4 | Infant Mortality Rate 0–1 year per 1000 live births | 50 | 44 | 94 |
| 4 | Children under 5 mortality rate per 1000 live births | 50 | 50 | 94 |
| 4 | Children 1 year old immunized against measles, percentage | 49 | 67 | 76 |
| 5 | Current contraceptive use among married women, ages 15–49, any method, percentage | 23 | 39 | 91 |
| 5 | Births attended by skilled health personnel, percentage | 27 | 56 | 67 |
| 6 | Tuberculosis detection rate under DOTS | 43 | 53 | 72 |
| 6 | Tuberculosis prevalence rate per 100,000 population | 50 | 46 | 64 |
| 6 | Tuberculosis death rate per year per 100,000 population | 50 | 56 | 46 |
| 6 | Tuberculosis incidence rate per year per 100,000 population | 50 | 30 | 30 |
| 6 | People Living with HIV 15–49 years old, percentage | 40 | N/A | 38 |
| 7 | Proportion of the population using improved drinking water sources, total | 46 | 48 | 83 |
| 7 | Proportion of the population using improved sanitation facilities, total | 45 | 58 | 82 |
| 7 | Slum population as percentage of urban, percentage | 35 | 71 | 74 |
| 7 | Terrestrial and marine areas protected to total territorial area, percentage | 46 | 9 | 54 |
| 7 | Carbon Dioxide Emissions, metric tons CO2 per capita, (CDIAC) | 47 | 45 | 40 |
| 8 | Debt service as percentage of exports of goods and services and net income | 38 | 47 | 84 |

*Source:* Author calculations based on data from UN Statistical Division *Millenium Development Goals Indicators* (2010).

Table 5. *Twenty countries showing improvement post MDGs for the highest number of indicators*

| Country | Region | Number of indicators for which country shows improvement |
|---|---|---|
| Nigeria | sub-Saharan Africa | 16 |
| Ethiopia | sub-Saharan Africa | 16 |
| Burkina Faso | sub-Saharan Africa | 15 |
| Uganda | sub-Saharan Africa | 15 |
| Rwanda | sub-Saharan Africa | 14 |
| Zambia | sub-Saharan Africa | 13 |
| Bangladesh | South Asia | 13 |
| Pakistan | South Asia | 13 |
| Cambodia | Southeast Asia | 12 |
| Central African Republic | sub-Saharan Africa | 12 |
| China | East Asia | 12 |
| Colombia | Latin America and Carribean | 12 |
| Madagascar | sub-Saharan Africa | 12 |
| Malawi | sub-Saharan Africa | 12 |
| Mozambique | sub-Saharan Africa | 12 |
| Senegal | sub-Saharan Africa | 12 |
| Zimbabwe | sub-Saharan Africa | 12 |
| Uzbekistan | Central Asia | 11 |
| Romania | Eastern Europe | 11 |
| Republic of Moldova | Central Asia | 11 |

*Source:* Author calculations based on data from UN Statistical Division *Millenium Development Goals Indicators* (2010).

it make sense to label a region as failing for which almost 90% of the countries have improved, and more than half have accelerated their improvement post-MDG? This goal seems to be one where sub-Saharan Africa has had some relative success.

## 6. ASSESSING NON-LINEAR ACCELERATION OF IMPROVEMENT: CHILD MORTALITY

For some indicators, acceleration of improvement becomes increasingly difficult as levels of achievement increase. In these cases, the previously described method may not be the most suitable for determining if the MDGs have accelerated progress. To measure year to year progress in Under Five Mortality per 1000 live births, UNICEF uses a method of calculation known as average annual rate of reduction (AARR). The AARR method of measurement reflects the fact that as child mortality rates reach a lower point, the same or greater absolute reduction becomes more difficult. In other words, at lower levels of mortality a similar or even smaller absolute reduction may actually represent a greater percentage reduction (UNICEF, 2008, p. 153). The AARR is therefore calculated in a manner that reflects this fact. In the following section, we have used the AARR to measure whether there has been a post-MDG acceleration of improvement in all countries worldwide, through a comparison of both 1970–1990 and 1990–2000 rates of improvement with post-2000 rates of improvement.

This formula is expressed as:

$$[(\ln(X_2/X_1))/(T_1 - T_2)]^*100$$

Table 6. *sub-Saharan Africa – Alternate evaluations of MDG performance for sub-Saharan Africa*

| Goal or indicator | Authors' progress method (% countries) – Progress – Stagnation – Regress | UNDP MDG monitor (% countries) – Achieved/on track – Possible to achieve with changes – Off track | World Bank global monitoring report (% countries) – On target – Close to target – Far from target |
|---|---|---|---|
| Goal 1: Halve proportion of people with less than $1/day income | 100 | 25 | 40 |
| | 0 | 75 | 40 |
| | 0 | 0 | 20 |
| Goal 4: Reduce by ¾ Under-5 mortality rate | 73 | 26 | 4 |
| | 21 | 43 | 24 |
| | 6 | 13 | 72 |
| Goal 7: Proportion of population using improved water source | 57 | 14 | 33 |
| | 41 | 59 | 48 |
| | 2 | 28 | 19 |

*Source:* Author calculations based on data from UN Statistical Division *Millenium Development Goals Indicators* (2010), UNDP *MDG Monitor* (2011), and The World Bank *Global Monitoring Report* (2011).

Table 7. *Top performers by absolute pace of progress*

| Country | Region | Number of Indicators for which country is in top 15 in size of improvement |
|---|---|---|
| Ethiopia | sub-Saharan Africa | 10 |
| Rwanda | sub-Saharan Africa | 10 |
| Central African Republic | sub-Saharan Africa | 9 |
| Burkina Faso | sub-Saharan Africa | 8 |
| Zambia | sub-Saharan Africa | 8 |
| Cambodia | Southeast Asia | 6 |
| Lesotho | sub-Saharan Africa | 6 |
| Madagascar | sub-Saharan Africa | 6 |
| Tajikistan | Central Asia | 6 |
| United Republic of Tanzania | sub-Saharan Africa | 6 |
| Botswana | sub-Saharan Africa | 5 |
| Chad | sub-Saharan Africa | 5 |
| Congo | sub-Saharan Africa | 5 |
| Malawi | sub-Saharan Africa | 5 |
| Mozambique | sub-Saharan Africa | 5 |
| Nigeria | sub-Saharan Africa | 5 |
| Swaziland | sub-Saharan Africa | 5 |
| Iraq | West Asia | 4 |
| Senegal | sub-Saharan Africa | 4 |
| Nepal | South Asia | 4 |

*Source:* Author calculations based on data from UN Statistical Division *Millenium Development Goals Indicators* (2010).

where $X_1$ and $X_2$ and $T_1$ and $T_2$ are the data points and years, respectively, for the beginning and end of the period for which the rate of change is being calculated (and ln is natural log). For our purposes we compared these calculated rates of change for multiple periods, as described above. UNICEF has previously used this method to compare time periods for individual countries, as we are proposing to do here. In their "The State of the World's Children 2009" Report, AARR was calculated for every country worldwide from 1970 to 1990, and then from 1990 to 2007, for the purposes of comparison (UNICEF, 2008, pp. 154–7). The change being made here is simply to make the same country by country comparison, but using 2000 as the middle year in an attempt to quantify the post MDG implementation change in progress. UNICEF has in fact already used AARR to provide concrete information on acceleration over the MDG time period- as far as these authors are aware, the only UN body to do so. They report that there has been a worldwide acceleration in improvement (from a 1.4% to a 2.3% AARR) ( UNICEF, 2009). These AARRs are available country by country for 2010 in the latest State of the World's Children Report (UNICEF, 2012).

Aside from this readily available formula for measurement, under five mortality was chosen to be examined in greater detail and for a larger historical period both due to its central importance,[7] and to the fact that the methods of reporting success or failure along this indicator are especially convoluted. The UN MDG report describes a decline based on a comparison of total deaths under five worldwide during 1990–2007 (UN, 2009, p. 4). At other points in the same report, comparisons between the under five deaths per one thousand children worldwide in 1990 and 2007 are cited as the evidence of a steady decline (UN, 2009, p. 24). However, the report goes on to remark that in many regions, especially sub-Saharan Africa, there has been "little or no progress." (UN, 2009, p. 25). A graph meant to illustrate worldwide progress includes only three data points, the 1990 level, the 2007 level, and the 2015 targets, all given at the regional level (UN, 2009, p. 24). There is no discussion in the report of any changes in trend at the worldwide, regional, or national level. The World Bank reports that developing countries have made "notable but insufficient progress" toward the MDG of reducing child mortality by two-thirds (World Bank p. 19). The bank supports this argument by citing an overall reduction in under five mortality per 1000 in developing countries as a whole from 1990 to 2006. UNICEF has stated on its website that "substantial progress" has been made toward the achievement of the under five mortality MDG. However, aside from the previously mentioned lone sentence on post MDG acceleration, the focus of the UNICEF webpage devoted to under five mortality statistics remains on 1990–2008 rates of change as a whole, absolute change during this period, and whether regions are "on track" to meet the MDG (UNICEF, 2009).

Table 8. *Countries showing improvement in Under Five Mortality Trends, by region*

| Region | Total countries available 2000–2010 *versus* 1990–2000 | Number of countries 2000–2010 improved viz 1990–2000 | % Of countries showing improvement in later period (%) | Total countries available 2000–2010 *versus* 1970–1990 | Number of countries 2000–2010 improved viz 1970–1990 | % Of countries showing improvement in later period (%) |
|---|---|---|---|---|---|---|
| sub-Saharan Africa | 47 | 35 | 74 | 40 | 24 | 60 |
| Latin American and Caribbean | 32 | 18 | 56 | 28 | 13 | 46 |
| Middle East and North Africa | 20 | 10 | 50 | 17 | 4 | 24 |
| South Asia | 6 | 2 | 33 | 6 | 3 | 50 |
| East Asia and Pacific Islands | 29 | 15 | 52 | 18 | 10 | 56 |
| Former Soviet States | 25 | 14 | 56 | 7 | 6 | 86 |
| Other | 36 | 13 | 36 | 27 | 10 | 37 |
| Totals | 195 | 107 | 55 | 143 | 70 | 49 |

*Source:* Author calculations based on UNICEF (2012).

In our analysis, a comparison was made between the 2000–2010 trends with not only the 1990–2000 trends, but also with the 1970–1990 trends. The intent was the same, to quantify the extent to which post-MDG trends have improved on historical trends. Data from UNICEF latest State of the World's Children report (UNICEF, 2012) were used for the analysis. Using the AARR method and UNICEF data, two comparisons were made: between both the 1970–1990 trends and the 2000–2010 trends, and the 1990–2000 and 2000–2010 trends. Out of the 195 countries for which it was possible to calculate 1990–2000 rates, 107%, or 55%, showed accelerated rates in the 2000–2010 period. This method of calculation results in a better showing than a comparison of only absolute rates of change (refer back to Table 2), as it is designed to do. The 1970 to present rates comparisons produce a perhaps more discouraging result. Of 143 countries for which it was possible to calculate 1970–1990 rates, only 70%, or 49%, showed accelerated improvement over the 1970–1990 rate in the 2000–2010 time period. While taken together, these comparisons indicate that there has not been an overall post-MDG declaration improvement over historical trends in under five mortality reduction in most countries worldwide, the regional pattern shows an interesting variation reinforcing results from previous analysis. In sub-Saharan Africa for example 35 out of 47 countries—almost 75% have shown an improved rate of reduction in 2000–2010 as compared to 1990–2000, with 60% showing an improvement from the 1970–1990 period. No other region has performed so impressively although in Latin America and the Caribbean East Asia and the Pacific and Central and Eastern Europe and the Commonwealth of Independent States more than half the countries performed better in the 2000–2010 period as compared to the decade before the MDGs were established (Table 8).

## 7. CONCLUSIONS

This paper has sought to clarify some controversies in the academic and policy debates about the purpose of MDGs as an international policy tool, and the use of MDGs as performance measures. Like all global goals, MDGs have two objectives: to encourage effort; and to provide a more rigorous monitoring framework for the commitments made to end global poverty. The consensus method for measuring progress which estimates the shortfall between achievement and target does not effectively address either objective. We propose an alternative which measures the rate of progress directly and asks whether there has been an improvement since the commitments were made, and identifies countries where performance has been stagnating and regressing and require serious attention.

Empirical analysis using our metric tells a starkly different story about the performance of countries. The results suggest disappointing effect in speeding up the pace of poverty reduction across the world yet considerable success in sub-Saharan Africa, the very region whose countries, we are told, are farthest from the targets. Far from failing, it is the countries of this region that are outpacing global trends.

International reporting of MDG progress using the incorrect method is resulting in misleading assessments of country performance that could have significant consequences. Countries making significant progress being assessed as failures could be encouraged to revise their policies when in fact they are working, and in an environment of aid architecture predicated on rewarding demonstrated good policies and institutions, this has consequences for financing poverty reduction efforts.

The shortcomings of the consensus approach arise from lack of clarity about MDGs as a concept and of global goal setting generally. The MDGs are benchmarks that strengthen monitoring implementation of normative commitments. They must not be treated as hard national planning targets that they were not designed to be nor that can be defended. In 2005, then Secretary-General Kofi Anan's report on the progress of the Millennium Declaration described the MDGs as "globally accepted benchmarks of broader progress." (UN, 2005, p. 10). The UN is contradicting itself by evaluating progress by target achievement.

Our empirical analysis is based on a methodology that assumes linear rate of change as our purpose was to highlight the difference between our pace of progress approach and the conventional approach focusing on achieving the targets. Some recent working papers have emerged that explore other issues with the conventional measurement approach. Hailu and Tsukada (2011), in a similar manner to this paper, compare progress in the pre- and post- MDG periods. However, these authors attempt to correct for non-linearity in the rates of change, as well as following Osorio (2008) in arguing that the goals become more difficult to reach as they approach their upper or lower bounds. The authors transform an indicator into a unit free score based on its original levels, its upper and lower bounds, and an (arbitrarily chosen) measure of effort appreciation. The rate of change calculated is then based on the change in these unit free indicators. Despite the multitude of different methodological choices, Hailu and Tsukada's findings are broadly similar to our own, in that they find a disproportional number of sub-Saharan African countries showing improvement; eight of the top 10 and thirteen out of the

top 20 performers are sub-Saharan African countries in their results.

Leo and Barmeier (2010) create a MDG Progress Index, which assigns each country a "1" for a goal if it is at or above the necessary rate to achieve that goal, and a "0.5" if the indicator is improving at 50% of the necessary rate, then averages these scores to create a single, numerical score for each country. An interesting feature of the aggregate score approach is that it may do a better job of accounting for the possibility of tradeoffs between progress in different areas. This perspective is not addressed by merely looking at a country's rates of change on an individual indicator, but can be when assessing countries by, for example, the number of indicators for which their rates of change have improved. Though the Leo and Barmeier method allows countries some credit for improvement if they are not on pace to meet the goal, it is still largely based on whether countries are on a pace to meet the goals. The potential problems with this type of assessment are discussed extensively above. Finally, Klasen and Lange (2011) propose another very interesting approach, also offered in place of using the goals as numerical targets. These authors compare change on specific indicators in individual countries to calculated historical "average" rates of change for all countries in said indicators, taking into account initial positions and find an "S-curve" shaped non-linear pattern of change. They then create a performance index defined as the ratio of actual change over expected change (based on historical average change) of an indicator. This method is only applied to a relatively small number of indicators. On under five mortality, Klasen and Lange find that more sub-Saharan African countries are outperforming historical averages than are on pace to meet the MDG goals. Kenny and Sumner (2011) offer a similar approach to Klasen and Lange, as well as a useful review and summary of the results of several different methods of assessment, including the one presented here.

A clear need in future research is to empirically assess the impact of the MDGs as the *causes* of these changes in trends, and a continued refinement of new progress measures is also likely needed. The purpose of this paper was primarily; first to clarify the concept of the MDGs as a policy instrument as an incentive device and an accountability framework, and second to demonstrate the need to rethink the approach to monitoring including the success criteria and measurement method for evaluating country performance. For that reason, our methodology makes the same assumption about linear progress as do the official reports. [8]

The MDGs are unquestionably a worthwhile policy initiative of the international community that have created an unprecedented mobilization for human development and eradicating poverty. However, the fixation on the goals as hard planning targets has distracted from properly using them as benchmarks for gauging progress toward commitments made and measuring their effects on ending poverty. Global goals set priorities in a normative framework based on participatory debate and consultations among governments. They are not set on a technocratic basis and cannot be justified as planning goals. They do however provide guidance for global and national development policy and should be treated as benchmarks for evaluating progress. In this framework, the question is whether governments are living up to their commitments and doing more to end poverty, and whether that is having any effect. The metric for measuring progress is the rate of progress, not the likelihood of achieving the target. The critical question for implementation is to understand where and why there has been acceleration of progress in some countries and not others.

## NOTES

1. By human poverty, we refer to poverty as defined by the UNDP Human Development Report 1997. It refers to capability failures that have multiple dimensions that extend beyond income (UNDP, 1997).

2. Others have argued that these consequences were overstated. See for example McKinley, 2005.

3. See for example guidelines of the UN Development Group.

4. For several years, the UN Millennium Project engaged in such exercises.

5. In addition to excluding indicators with insufficient information, several other indicators were not included in the final tallies. Many goal eight indicators, for example untied Official Development Aid (ODA), or ODA to social services, are "input", rather than outcome related. Because the purpose of the paper is to provide a methodology for measuring MDG performance, including with respect to increased aid, input indicators such as these were not included. Also excluded were three goal 8 technology related indicators; telephone lines, internet users, and mobile telephone users per 100 population. It can be assumed that these indicators consistently improved for virtually every country during the time, and that this phenomenon is unrelated to MDG implementation. For example, 201 out of 202 countries for which data were available saw an improvement in the number of internet users per 100 population from 1990 to most recently available date, North Korea being the sole exception. This fact does not seem relevant in determining the success of the MDGs. Lastly, there are four separate indicators measuring carbon emissions, the United Nations Framework Convention on Climate Change (UNFCC) measure of emissions in total metric tons, UNFCC emissions per capita, the Carbon Dioxide Information Analysis Center (CDIAC) measure of total emissions in metric tons, and CDIAC emissions per capita. In order to not skew the results by including four indicators measuring essentially the same variable, it was decided to include only one carbon emission related indicator, the CDIAC (which had data for significantly more countries) measure of emissions *per capita.*

6. One of the 25 indicators analyzed, HIV/AIDS prevalence, did not have data for two time periods, and so could not be included in the evaluation of acceleration.

7. The indicator is important for both intrinsic and instrumental reasons. Survival is clearly of ultimate intrinsic value for all human beings. The extent to which a society is able to assure the survival of children is of central importance in evaluating social arrangements. It reflects on a number of arrangements, such as accessibility of clean water, sanitation facilities, education of women, maternal-child health support, provision of primary health care facilities, provisioning for food security and others. Child survival, reflecting more broadly the health of children, is instrumentally important for other development objectives such as building human capital and facilitating the demographic transition.

8. Another important consideration when assessing any of these methods is the quality, availability, and stability of the data used to measure these indicators. For example, Leo and Thuotte (2011), revising Leo and Barmeier's MDG Progress Index approximately a year after the original

paper, found that data revisions had lead to changed scores and different conclusions for a large number of countries, especially in the area of education. All of the approaches described above, including those of the authors, of the working papers cited, and the official international body reports, are subject to similar possible changed outcomes with future data revisions.

## REFERENCES


African Development Bank. (2009). *Assessing progress in Africa towards the millennium development goals MDG report 2009*. United Nations Economic Commission for Africa, African Union Commission, African Development Bank.

Asian Development Bank. (2007). *The millennium development goals: Progress in Asia and the Pacific 2007*. United Nations Economic and Social Commission for Asia and Pacific, Asian Development Bank, United Nations Development Programme.

Clemens, M. A., Kenny, C. J., & Moss, T. J. (2007). The trouble with the MDGs: Confronting expectations of aid and development success. *World Development, 35*(5), 735–751.

Easterly, W. (2009). How the millennium development goals are unfair to Africa. *World Development, 37*(1), 26–35.

Fukuda-Parr, S. (2010). The missing MDG: Reducing inequality. *IDS Bulletin*. Falmer: Institute of Development Studies, University of Sussex.

Gupta, S., Powell, R., & Yang, Y. (2005). The macroeconomic challenges of scaling up aid to Africa. *IMF Working Paper WP/05/17.9*. Washington DC: IMF.

Hailu, D., & Tsukada, R. (2011). Achieving the millennium development goals: A measure of progress. *International Policy Centre for Inclusive Growth Working Paper 78*. Brasilia, Brazil: United Nations Development Programme.

Hulme, D. (2010). Lessons from the making of the MDGs: Human development meets results-based management in an unfair world. *IDS Bulletin, 41*(1), 15–25.

Jolly, R. (2004). Global goals – the UN experience. *Journal of Human Development and Capabilities, 5*(1), 69–95.

Kenny, C., & Sumner, A. (2011). More money or more development: What have the MDGs achieved? *Center for Global Development Working Paper 278*. Washington, DC: Center for Global Development.

Klasen, S., & Lange, S. (2011). Getting progress right: measuring progress towards the MDGs against historical trends. *Courant Research Centre Discussion Paper 87*. Goettingen, Germany: University of Goettingen.

Leo, B., & Barmeier, J. (2010). Who are the MDG trailblazers? A new MDG progress index. *Center for Global Development Working Paper 222*. Washington, DC: Center for Global Development.

Leo, B., & Thuotte, R. (2011). MDG progress index 2011. *Center for Global Development Notes*. September 2011. Washington, DC: Center for Global Development.

McKinley, T. (2005). Why is the "Dutch Disease" always a disease? The macroeconomic consequences of scaling up ODA. *International Policy Centre for Inclusive Growth Working Paper 10*. Brasilia, Brazil: United Nations Development Programme.

Osorio, R. G. (2008). Can we accurately project MDG indicators? *One pager 68*. International Poverty Centre, United Nations Development Programme. Brasilia, Brazil: United Nations Development Programme.

Saith, A. (2006). From universal values to millennium development goals: Lost in translation. *Development and Change, 37*(6), 1167–1199.

The World Bank. (2009). *Global monitoring report 2009: A development emergency*. Washington DC: The World Bank.

The World Bank. (2011). *Global monitoring report 2011: Improving the odds at achieving the MDGs*. Washington DC: The World Bank.

UN General Assembly (2000). Resolution adopted by the General Assembly, United Nations Millennium Declaration, A/res/55/2. New York: United Nations.

UN General Assembly (2001). Road map towards the implementation of the United Nations Millennium Declaration. Report of the Secretary-General A/56/326, New York, 6 September 2001.

UN Statistical Division Millenium Development Goals Indicators. (2010). <http://mdgs.un.org/unsd/mdg/Data.aspx> Retrieved 2010.

UNDP (1997). Human development report. New York: Oxford University Press.

UNDP (2003). Human development report. New York: Oxford University Press.

UNDP (2011). *MDG Monitor*. <http://www.mdgmonitor.org/country_progress.cfm> Retrieved 2011.

UNICEF. (December 2008). The state of the world's children 2009. New York: UNICEF.

UNICEF. (2009, November). *Statistics by area/child survival and health*. Child info: Monitoring the situation of children and women. http://www.childinfo.org/mortality.html> Retrieved February 2010.

UNICEF. (February 2012). The state of the world's children 2012. New York: UNICEF.

United Nations. (2005). *In larger freedom: towards development, security and human rights for all*. Report of the Secretary General. New York: United Nations.

United Nations. (2009). *The millennium development goals report 2009*. New York: United Nations Department of Economic and Social Affairs.

United Nations. (n.d.). A gateway to the UN system's work on the MDGS. <http://www.un.org/millenniumgoals/bkgd.shtml> Retrieved March 7 2010.

Vandemoortele, J. (2009). MDGs conumdrum: Meeting the targets without missing the point. *Development Policy Review, 27*(4), 355–337.