CHAPTER FIVE
More Armed Violence, Less Development

ARE LOWER-INCOME populations more affected by armed violence than wealthier ones? The poor who witness or survive shootings and physical violence are only too aware of the resulting pain, suffering, and trauma. Rich or poor, armed violence shortens planning horizons, erodes social capital, and undermines the skills and assets necessary for a productive life. As a result, it disrupts and distorts the political, economic, and social institutions required to ensure predictable and stable growth and development. In almost all cases, armed violence generates negative consequences for people's quality of life and the achievement of the Millennium Development Goals (MDGs).

Today, most international development agencies and government aid departments recognize and accept the strong association between insecurity and underdevelopment. They understand that without adequate security in areas of need, opportunities and investments in development are squandered. United Nations agencies—including the UN Development Programme (UNDP) and the World Bank—increasingly promote security as a top priority in fragile and violence-affected settings. Moreover, the Organisation for Economic Co-operation and Development's Development Assistance Committee (OECD–DAC) has set out standards to guide investments in armed violence prevention and reduction.[1]

An increasing array of statements and resolutions reinforces the notion that the rule of law and freedom from violence are requisites of good governance, economic progress, and human well-being. Many of these same texts also warn of the reverse: that impoverishment, economic stagnation, weak governance, and lawlessness contribute to the onset and persistence of violence. Indeed, such views are now routine within the UN and among its member states (UNGA, 2008; 2009; Geneva Declaration Secretariat, 2008). It is likewise acknowledged that persistent instability and insecurity can undermine governance, destroy human and physical capital, reduce productivity and investment, and contribute to wider human poverty and misery.[2]

Although widely acknowledged, the two-way relationship between insecurity and underdevelopment is seldom interrogated. Specifically, is it the case that armed violence undermines development in all cases? Does underdevelopment always enable violence? Is the relationship linear and inevitable? What is the direction and strength of the association? In many cases these relationships are presumed without any agreement on what is meant by security, development, or violence. At the micro level, there is mounting evidence that individuals, households, and communities affected by certain forms of armed violence—especially war—tend to underperform in social and economic terms.[3] Similarly, a number of macro-level assessments demonstrate how states plagued with underdevelopment are particularly susceptible to disproportionately high

rates of violence.[4] And yet these relationships are complex and seldom as straightforward as they are often made out to be.

In order to test these and related claims it is first critical to determine whether and to what extent lower-income countries experience more (or less) violence than middle- and upper-income countries. A comprehensive appraisal using a long time series and a comprehensive definition of development is critical in order to assess whether and how armed violence restricts poorer countries from achieving their full development potential, including attainment of the MDGs. Moreover, such an assessment is crucial if policy recommendations are to correspond to actual needs and target problems effectively.

When examined in the aggregate, it is obvious that the global burden of armed violence is weighted unfavourably against the poor. The large majority of the estimated 526,000 people directly killed each year as a result of armed violence reside in low- and medium-income settings (TRENDS AND PATTERNS).[5] More than two-thirds of them die as a result of homicidal violence—not on the battlefield or in the midst of war. A smaller proportion of those dying directly and indirectly from violence can be attributed to conflict-related incidents and easily preventable illnesses in war zones. While these figures offer a global profile of the distribution of armed violence, they also obscure more complex socio-economic trends and patterns.

This chapter gathers extensive and publicly available statistical data to examine the relationships between development and lethal violence.[6] It demonstrates how countries that exhibit high intentional homicide rates also commonly register low levels of development. It finds that countries affected with above-average rates of lethal violence also tend to report slower progress towards achieving specific MDGs. By unpacking the correlates between lethal violence and specific forms of development achievement, the chapter intends to assist policy-makers and practitioners in better understanding the reasons for investing in violence prevention and reduction.

Among the key findings of the chapter are:

- Lethal violence is strongly associated with negative development outcomes in various ways and is accompanied by low levels of overall MDG achievement.

- The higher the level of lethal violence recorded in a country, the larger its gap with respect to other countries in terms of development.

- A reduction in a country's incidence of lethal violence corresponds with improved MDG performance across most indicators.

- High rates of intentional homicide are accompanied by significantly higher levels of extreme poverty and hunger (MDG 1), lower primary education enrolment (MDG 2), and higher infant mortality and adolescent birth rates (MDGs 4 and 5).

- Countries that report proportionately lower levels of income inequality and unemployment exhibit comparatively lower levels of homicide.

- States that feature lower levels of human development and income almost always report high and very high levels of lethal violence.

- Monitoring of armed violence should be integrated into routine MDG progress assessments and more investments are required in national data gathering capacities and observatories.

In order to clarify the basic terms of the debate, the chapter first reviews a number of core concepts that are central to empirically evaluating

the relationships between armed violence and development. Section two presents a short over-view of the statistical findings from a review of key indicators. Drawing on recent scholarly findings, the third section considers the extent to which the outcomes of the statistical assessment are supported in the social science literature. The chapter concludes with a cursory treatment of how monitoring of armed violence could be integrated into a routine evaluation of country MDG assessments.

Conceptualizing the relationship

Armed violence and its consequences are multi-dimensional and heterogeneous in their manifes-tations. On the one hand, armed violence can be traced according to where it occurs geographically and physically—whether along international bor-ders, in inner city neighbourhoods, in peri-urban villages and towns, in pastoral hinterlands, or in the walled compounds of households. Yet pinning down its precise effects is more complicated since they tend to ripple outwards, affecting individuals, households, cities, and states. For these and other reasons, a simple accounting of the statis-tical relationships between armed violence and development is often hampered by conceptual confusion and evidence gaps.[7]

There are a number of ways to conceptualize and define armed violence. This chapter draws pri-marily on indicators of lethal violence—including intentional homicide and direct conflict deaths. There are, of course, many manifestations of armed violence, including physical and psychological harm and harassment, material deprivation, and other more subjective factors, such as fear.[8] The intangible dimensions of armed violence are often more consequential than may be assumed; recent

neurological and behavioural studies highlight the ways in which physical violence generates physiological and psychological consequences for human health and vice versa.[9] Although the boundaries between different types of armed violence are blurry, research nevertheless requires discrimination between categories.[10]

There are as many ways to define and classify development. UNDP, for example, defines 'human development' as a process of enlarging people's choices.[11] What are the metrics of such a broad definition? Development specialists generally concede that narrow proxies—such as income and economic growth (including gross domestic or national product per capita)—are insufficient expressions of development, even though they may be necessary. For the purposes of this chapter, development is disaggregated according to 21 specific MDG indicators, three World Bank devel-opment metrics, and one UNDP indicator.[12] These indicators are selected because they more effec-tively gauge wider developmental progress than a singular focus on income. Moreover, they are the only indicators for which enough time series data (across various years) is consistently available.

A comprehensive accounting of the violence–development relationship requires valid and longitudinal data across a large cross-section of countries. Such information is often frustratingly difficult to acquire, especially in the case of fragile low- and medium-income settings and societies affected by chronic armed violence. Routine data deficiencies are treated at length in previous chapters and relate to incomplete and missing information and weak vital registration data har-vesting infrastructure in many countries. Other challenges concern confusing and potentially competing categories and codes for measuring trends in education, population health, and other indicators of human well-being.[13]
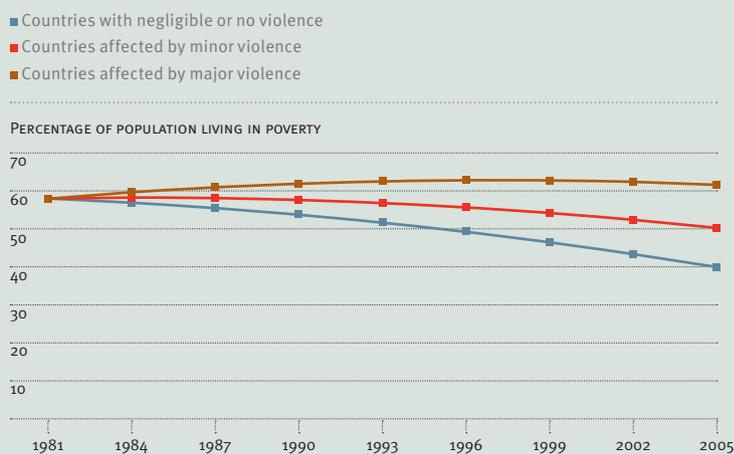
Box 5.1 Building states and societies that are resilient to conflict, crime, and violence: the 2011 *World Development Report*

The World Bank's mandate has evolved from a narrow focus on facilitating reconstruction in post-war Europe to a wider agenda of poverty reduction. Recently, the organization returned in some ways to its roots of reconstruction. The 2011 edition of the Bank's flagship publication—the *World Development Report*—is devoted to highlighting the plight of roughly 1.5 billion people affected by conflict, crime, and violence, and those living in 'fragile' situations (World Bank, 2011).

The *World Development Report 2011* begins by considering the dire consequences of fragility and violence on human development. It then explores the vicious cycles that result in repeated and evolving manifestations of violence in fragile states and the virtuous cycles of confidence building and institutional transformation necessary to effect long-term change. Finally, the report concludes with practical steps that national and international actors can take to support these initiatives and reduce the stresses that may interrupt the development of resilient states.

The report finds that people living in fragile situations are more likely to experience undernourishment and impoverishment than those living in stable and peaceful developing countries. Child mortality is twice as high in fragile and conflict-affected states than in states not affected by violence. Moreover, affected populations are less likely to have access to basic services—including education and water. Most telling from the report is the finding that no low-income fragile country has made any significant progress towards attaining a single MDG, even if they have made progress in the right direction. Repeated cycles of violence over the past decades are linked to high poverty rates; in countries ▸▸

FIGURE 5.1 The widening gap between countries affected by major, minor, and negligible violence

- ■ Countries with negligible or no violence
- ■ Countries affected by minor violence
- ■ Countries affected by major violence

PERCENTAGE OF POPULATION LIVING IN POVERTY

SOURCE: World Bank (2011, p. 60)

PHOTO Newly arrived refugees run away from a dust cloud at the Dagahaley refugee camp in Dadaab, near Kenya's border with Somalia, July 2011. Many of them were forced to leave their homes in Somalia in order to survive.
© Thomas Mukoya/Reuters

experiencing 'major' violence at any point during the period 1981 to 2005, poverty rates are, on average, 20 per cent higher than in countries that were minimally or not affected by violence (see Figure 5.1).

Consistent with the 2008 and 2011 *Global Burden of Armed Violence* reports, the World Bank finds that conflict, crime, and violence significantly reduce the growth rate of a country's gross domestic product (GDP). Beyond the destruction brought on by conflict and violence, political instability and conflict dissuade economic investment and can lead to unproductive spending on security measures. For example, in Guatemala, violence is estimated to have cost the country at least 7 per cent of GDP in 2005—much more than the damage wrought by Hurricane Stan.

The report also points to the damaging consequences of 'spill-over' effects of armed violence on neighbouring countries, where annual growth can also drop by as much as 0.7 per cent. A particularly vivid manifestation of these contagion effects relates to the costs of anti-piracy measures. At least 27 countries have spent USD 1.3–2 billion each year on interventions in the Gulf of Aden and in the Indian Ocean. The World Bank estimates that these costs may have risen as high as USD 4.5 billion in 2010 if all regions are considered, with the economic burden of paying out ransoms and related deterred investment running at USD 5.7–11.2 billion.

Another manifestation of conflict, crime, and violence is mass displacement, including both refugees and the internally displaced. While generating strains on neighbouring host countries, the exodus of human capital has both short- and long-term implications for domestic development. According to the most recent calculations released by the UN High Commissioner for Refugees, more than 43.3 million people had been forcibly displaced by the end of 2009, including 27 million internally displaced—the highest numbers of people since the mid-1990s.[14] Many have fled to urban centres, where social tension, crime, and communal violence may escalate.

The repeated and varied forms of violence that fragile states experience are driven by a vicious cycle of 1) elite pacts that do not reform institutions and 2) experience of new stresses and external shocks that can plunge a society into conflict. To break this cycle of fragility and violence, a society needs to build confidence in a national reform project and undertake institutional transformation.

The report argues that success in building resilient states requires confidence in national reform in fragile environments where trust is often lacking. This frequently involves sufficiently inclusive pacts committed to the reform process. These actors can build trust in the reform process through mechanisms that create credible commitments, such as appointing members of the opposition, improving transparency and accountability, revising discriminatory laws, and reforming security. To deliver early results that build confidence, successful reform efforts often involve 'best fit' rather than 'first best' technocratic solutions and aim for a limited number of achievable outcomes.

Investment in renewing social norms, bolstering the rule of law, and rehabilitating basic services is critical. The report emphasizes that weak governance and rule of law and high rates of corruption are correlated with a 30–45 per cent higher risk of experiencing a civil war and a significantly higher risk of extreme criminal violence than that of other developing states. However, institutional development is slow, incremental work. Institutions can be dismantled in days, but it takes generations to build or repair them. The *World Development Report 2011* estimates that the 20 fastest reforming countries in the 20th century took between 15 and 30 years to raise their institutional performance from very fragile to more resilient levels. On average, it took roughly 17 years to reduce military interference in politics and 27 years to establish effective controls on corruption.

The report concludes that development of states that are resilient to violence is necessarily a nationally owned enterprise; resilience cannot be imposed from the outside. However, the international community can take steps to assist countries that are trying to escape fragility. The *World Development Report 2011* recommends that international actors:

1) commit to better coordinated programmes across the development, security, political, and humanitarian spheres, with fewer priorities and more reasonable expectations;

2) reform internal policies to better identify and manage risks, including the risk of inaction in fragile situations;

3) reduce external stresses through regional and global action; and

4) promote South–South learning and experience sharing, collaboratively with emerging powers and regional institutions.

Source: Gary Milante

While acknowledging these limitations, this chapter draws on reliable figures assembled in a host of datasets documenting trends in lethal violence and development. These include the GBAV 2011 database, which is composed of multiple datasets.[15] The chapter also draws on UNDP- and World Bank-managed databases tracking MDG achievements and development progress, and on the World Bank's 2011 *World Development Report* in order to clarify the linkages between armed violence and development (see Box 5.1).
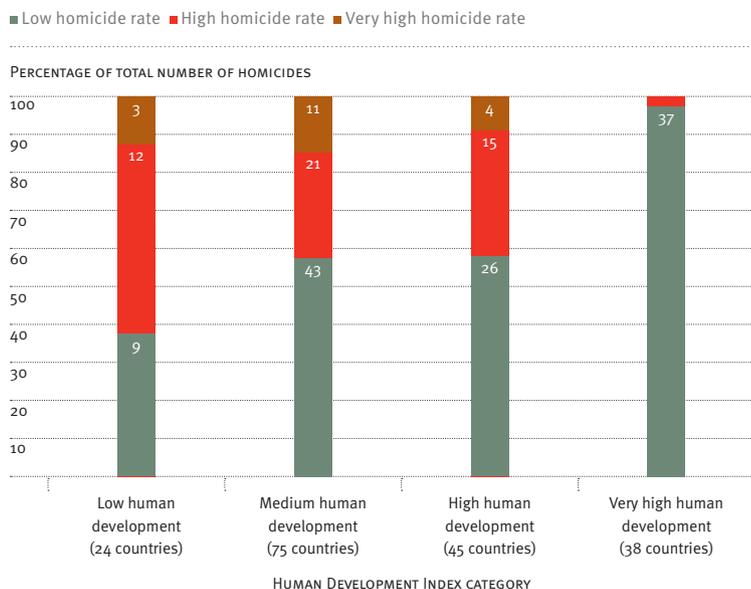
geographic data coverage for core development variables might generate biases in the sample and in results. As is the case for virtually any statistical assessment of development, ample reliable data is available from the Americas and Europe, whereas Africa, Asia, and Oceania are characterized by a dearth of information.[18] The resulting biases could eventually be corrected by a gradual improvement of data collection and sharing better information from under-represented states and territories.

Assessing the relationship

This chapter focuses on relationships and specific causal pathways that link lethal violence and underdevelopment. It examines the correlates between intentional homicide rates (per 100,000 population) and the development indicators cited above. Methodologically, this analysis pools homicide rates since the mid-1980s and searches for statistically significant relationships, with a specific focus on the direction and strength of associations. Methods used include an inspection of the inter-relationships between variables and correlation coefficient analysis.[16]

It is worth stressing that a correlation analysis cannot be undertaken unless there is information for both lethal violence and development indicators. Taken together, there are a total of 239 countries and territories for which reliable data may be available on homicidal violence or development indicators; however, data on *both* lethal violence and relevant development variables is available for only 170 countries and territories.

Also worth stressing is the fact that some development indicators feature more data points than others.[17] The lack of complete temporal and

Human development, income, and lethal violence

In order to situate the statistical analysis that follows, it is worth considering the distribution of countries according to their Human Development Index (HDI) scores in relation to lethal violence. Figure 5.2 provides an overview of 182 countries classified according to low (<0.47), medium (0.48–0.65), high (0.66–0.78), and very high (>0.78) development categories.[19] In 2009, there were 24 low HDI countries, 75 medium HDI countries, 45 high HDI countries, and 38 very high HDI countries. The figure also displays thresholds of homicide categorized according to three intervals: low (<7.25 per 100,000 population), high (7.25–18.57), and very high (>18.57) rates.[20]

In proportional terms, countries that register lower levels of human development exhibit more violence. Figure 5.2 reveals that almost two-thirds of low human development countries and almost half of all countries exhibiting medium human development feature homicide rates above the long-term average. In contrast, the figure shows that the vast majority of countries registering both high and very high levels of human development also feature proportionately lower levels of homicidal violence.

FIGURE 5.2 Disaggregated homicidal violence for 182 countries by HDI, 1986–2009[21]

■ Low homicide rate ■ High homicide rate ■ Very high homicide rate

PERCENTAGE OF TOTAL NUMBER OF HOMICIDES

Low human development (24 countries) — 9, 12, 3
Medium human development (75 countries) — 43, 21, 11
High human development (45 countries) — 26, 15, 4
Very high human development (38 countries) — 37

HUMAN DEVELOPMENT INDEX CATEGORY

NOTE: Numbers in the bars indicate how many countries fall into each of the three homicide rate categories (low, high, or very high). The figure for the top segment in the right-hand bar is '1'.

SOURCE: GBAV 2011 database and selected development and violence indicators

As can be seen in Figure 5.2, countries that exhibit high and very high homicide rates are concentrated in the low human development band. Yet a significant number and proportion of countries in the medium and high human development category report severe homicide levels. While lethal violence is concentrated primarily among underdeveloped countries, it is thus not the exclusive preserve of the poor. Indeed, taken together, approximately one-fifth (19 per cent) of the world's population resides in lower- and medium-income countries experiencing high and very high levels of lethal violence.[22]

Just as alarming are the ways in which low levels of development are in most cases correlated with higher violence over time. In other words, lethal violence appears to constrain development progress. Classifying countries as either 'improving'
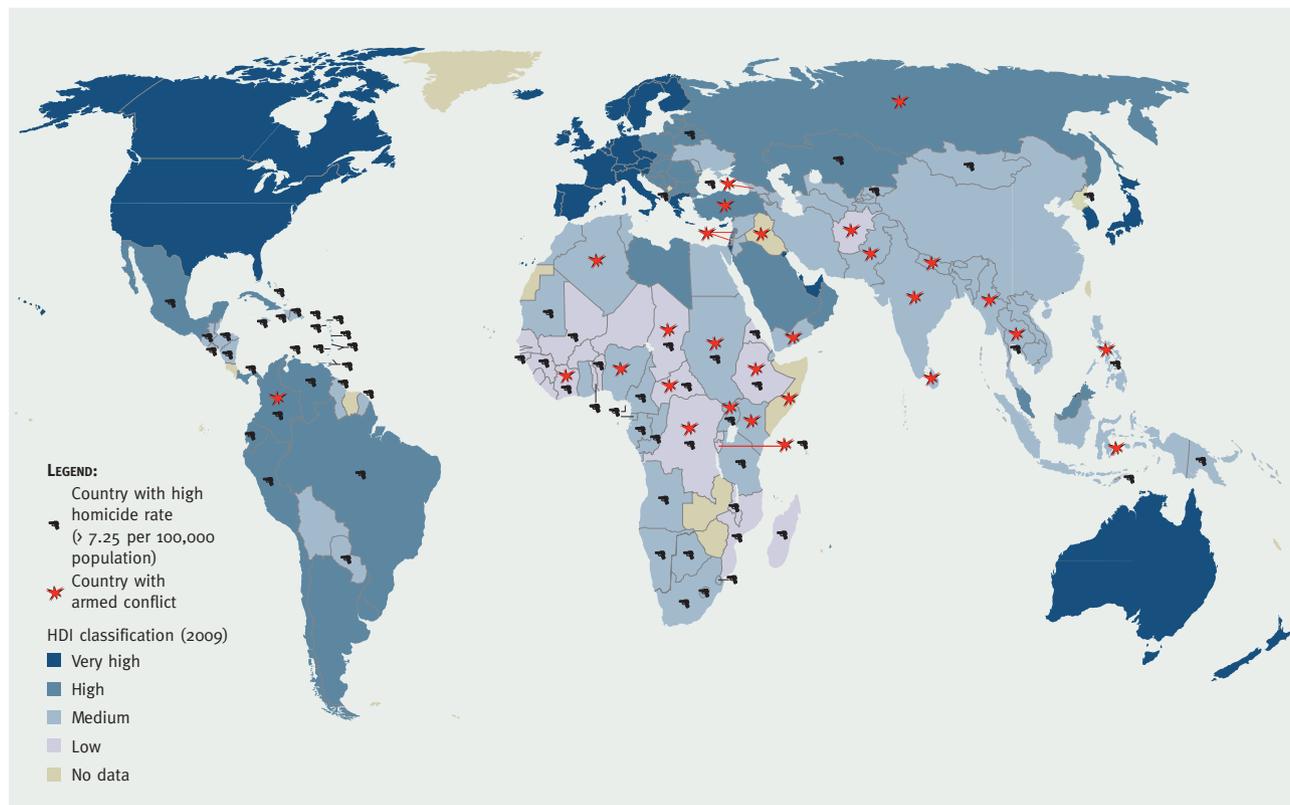
or 'deteriorating' across homicide and development indicators reveals how countries that register a crude improvement in their HDI are also most likely to exhibit lower levels of lethal violence. That is, homicide rates determine negatively and significantly the presence of any improvement of a country's HDI rating, constraining development progress. As such, the statistical assessment confirms that higher homicide rates are associated with lower HDI rankings.[23]

Taken together, the findings confirm that less developed countries experience more lethal violence than medium- and upper-income countries. Moreover, they demonstrate that lethal violence hampers development. They also reveal a strong and negative association between the levels of lethal violence in a country and the degree or extent of its development. The higher the level of lethal violence recorded in a country, the larger its gap with respect to other countries in terms of development.[24]

It is possible to geographically chart the relationships between lethal violence and human development according to thresholds of homicidal and conflict-related violence. As signalled in Chapter Two, countries featuring high homicide rates appear to be located predominantly in regions of Latin America and the Caribbean, Central and Southern Africa, and particular areas of Central and Southern Asia (TRENDS AND PATTERNS). Countries featuring armed conflicts are highly concentrated in lower-income settings throughout Africa and Asia, although some other regions are also represented (see Map 5.1).[25]

A regional analysis reveals a statistically significant inverse correlation between higher human development and lower homicide rates in North America, most of Asia, and Western, Eastern, and South-eastern Europe. Even across these regions,

Map 5.1 Geography of armed violence and human development, 2009

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Legend:

- Country with high homicide rate (> 7.25 per 100,000 population)
- ★ Country with armed conflict

HDI classification (2009)
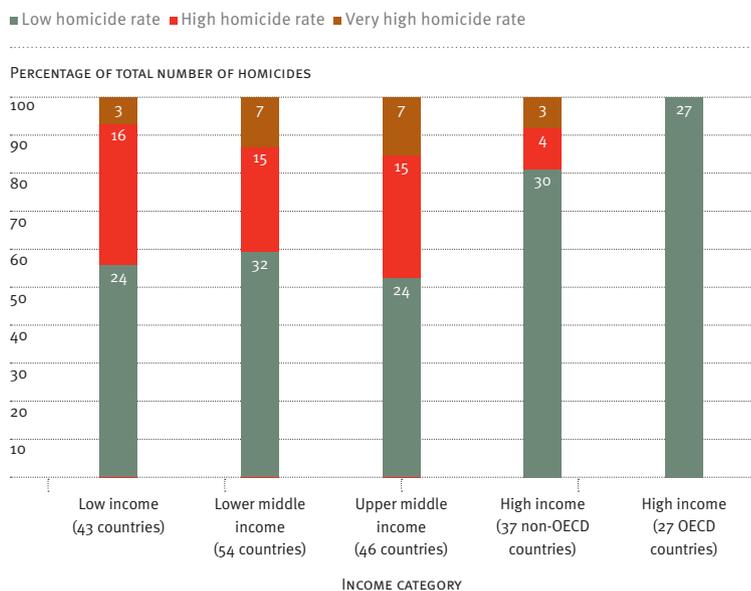- Very high
- High
- Medium
- Low
- No data

Source: GBAV 2011 database and selected development and violence indicators'

countries that report high homicide rates also correlate with comparatively lower levels of human development, thus reinforcing the conclusion that lower development is not arbitrarily or coincidentally associated with a higher incidence of homicidal violence.

Nearly half the countries that report low human development have experienced or are experiencing an armed conflict. It thus appears that the higher the level of human development, the less likely it is that the country is affected by an ongoing armed conflict. What is more, only three countries that feature relatively high human development are affected by conflicts of

various kinds—Colombia, the Russian Federation, and Turkey.

The negative relationship between lethal violence and underdevelopment holds when human development indicators are replaced by *income indicators*.[26] The World Bank reports information on income for 207 countries, all of which are included in this analysis.[27] Specifically, the lower the income registered by a given country, the higher the reported level of homicidal violence (see Figure 5.3). Moreover, wealthy member states of the OECD all report low rates of homicidal violence, and only a few non-OECD countries exhibit high or very high homicide rates.[28]

FIGURE 5.3 Disaggregated homicidal violence by income, 1986–2009

■ Low homicide rate ■ High homicide rate ■ Very high homicide rate

PERCENTAGE OF TOTAL NUMBER OF HOMICIDES

INCOME CATEGORY

NOTE: Numbers in the bars indicate how many countries fall into each of the three homicide rate categories (low, high, or very high).

SOURCE: GBAV 2011 database and selected development and violence indicators
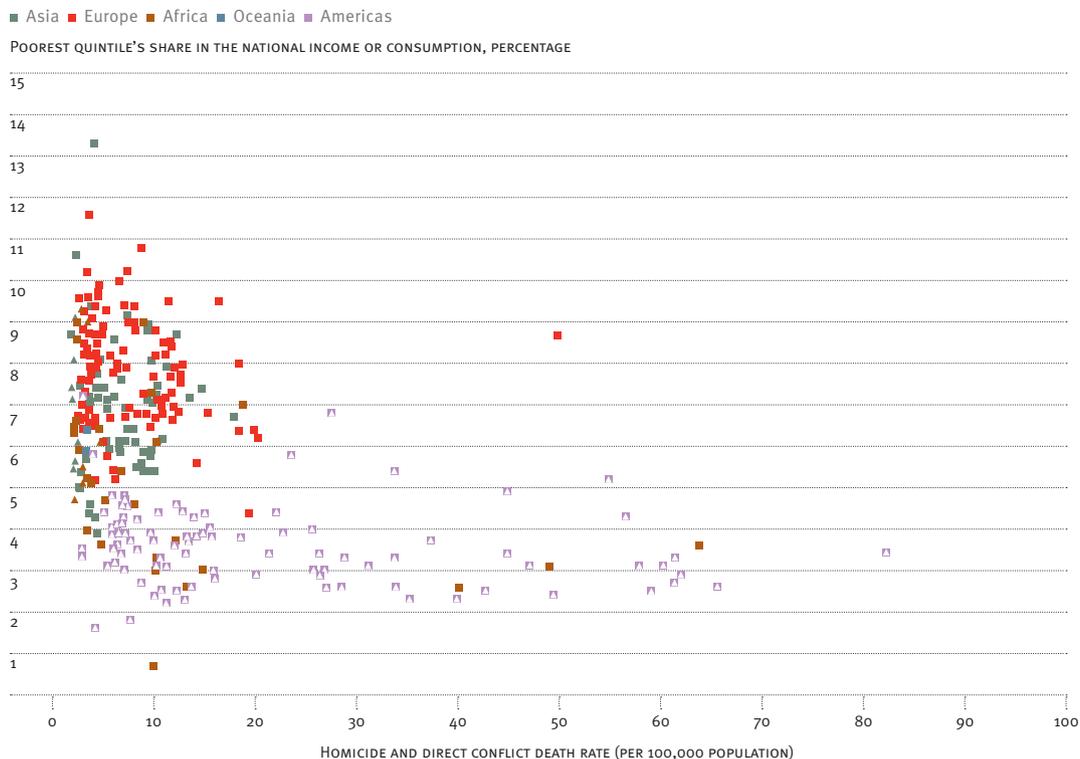
The MDGs and lethal violence

It also appears that higher levels of lethal violence are statistically correlated with lower levels of *MDG attainment*.[29] This statistical analysis considers seven of the eight MDGs and 21 indicators, included according to their availability.[30] For MDG 1 (eradicate extreme poverty and hunger) ten variables were considered. In the case of MDG 2 (achieve universal primary education), MDG 3 (promote gender equality and empower women), MDG 4 (reduce child mortality), and MDG 5 (improve maternal health), just two indicators (each) were used. Finally, for MDG 6 (combat HIV/AIDS, malaria, and other diseases) and MDG 7 (ensure environmental sustainability), one and three variables were included, respectively.

MDG 1 can be parsed into at least four specific targets focused on poverty, income, employment, and reductions in hunger. When lethal violence is correlated across these variables, it appears that countries registering higher poverty rates also record proportionately higher levels of homicide. It is important to stress that these findings do not necessarily account for a causal relationship: all countries that are poor are not necessarily more *predisposed* to high levels of lethal violence.[31] Even so, the statistical analysis detects a direct relationship between poverty levels (measured in terms of the percentage of the population living under USD 1 (PPP) per day) and homicidal violence.

Specifically, proportionately higher poverty levels tend to go hand in hand with higher levels of lethal violence. A similar negative relationship holds for the poverty gap ratio, which is a simple measure of inequality. This suggests that lethal violence is not only correlated directly with poverty measured as income, but also with poverty measured as inequality. Indeed, the higher the concentration of income among the rich, the higher the total levels of homicidal violence.[32]

The fact that countries registering greater *income inequality* also regularly exhibit a higher incidence of lethal violence is illustrated in Figure 5.4. Specifically, the figure depicts the relationship between homicide rates (squares) and direct conflict deaths (triangles) and the proportion of income earned by the lowest 20 per cent of the population in all countries for which data is available.[33] The figure shows that countries with higher levels of lethal violence (approaching the right end of the horizontal axis) coincide with higher inequality, measured as a low proportion of income earned by the poorest 20 per cent of the population (low on the vertical axis). The inverse also applies: countries experiencing low levels of lethal violence feature a higher proportion of participation of this same income group.

FIGURE 5.4 Disaggregating income inequality and lethal violence, 1986–2009[34]

■ Asia ■ Europe ■ Africa ■ Oceania ■ Americas

POOREST QUINTILE'S SHARE IN THE NATIONAL INCOME OR CONSUMPTION, PERCENTAGE

HOMICIDE AND DIRECT CONFLICT DEATH RATE (PER 100,000 POPULATION)

NOTE: Squares correspond to homicide rates and triangles represent direct conflict deaths.

SOURCE: GBAV 2011 database and selected development and violence indicators

This relationship between income inequality and lethal violence was scrutinized using statistical correlation tests. The relationship was found to be negative as well as significant (not by chance) and very strong (see Table 5.1). Note that a negative relationship between the two variables translates into a positive relationship of income inequality and lethal violence. Indeed, the strength of the correlation can be discerned by the 'cloud' of points that are concentrated from the top left to the bottom right of Figure 5.4. And while this negative correlation is especially strong for certain clusters of countries (such as Latin America), it applies generally to all regions.

In the meantime, countries that register *low unemployment* of young men and women (15–24 years of age) also tend to report lower levels of lethal violence. In particular, the lower a country's male youth unemployment rate, the stronger the probability that the country will also display a lower homicide rate. When this indicator is disaggregated by sex, the correlation between unemployed young women and homicide rates remains strong, indicating the absence of a gender bias. Further, while there is an association between lethal violence and *hunger* (as measured by the prevalence of underweight children under five), it is not statistically robust.

With respect to MDG 2—the achievement of *universal primary education*—the statistical analysis considers the net enrolment ratio in primary school and literacy rates of 15–24-year-olds.[35] A close inspection finds that higher homicide levels tend to occur in countries that register low primary education enrolment ratios (see Table 5.1). A potential causal link for this relationship can be hypothesized. For example, the inability of a society to keep its youth in the education system during a particularly risk-prone age can make them more predisposed to violence. Specifically, they may be more susceptible to recruitment into armed groups, such as gangs or guerrilla factions. In turn, this trajectory would deny them the productive capacities required to enter the labour market, thus further contributing to a downward spiral.
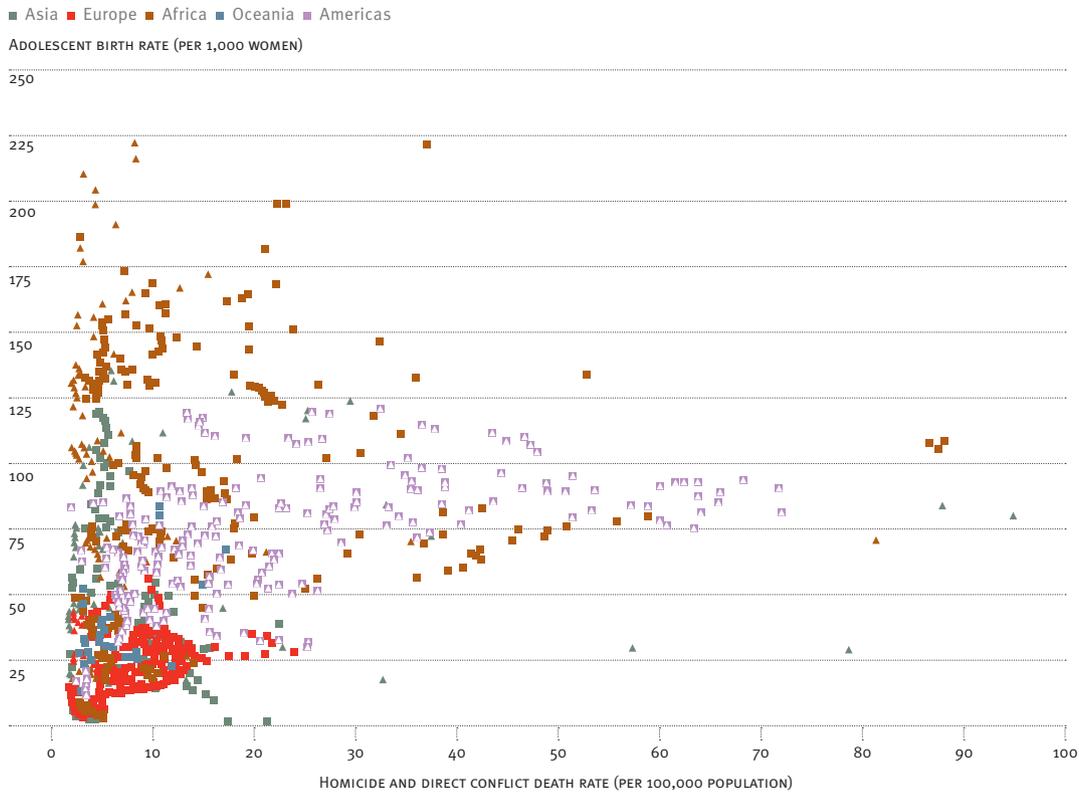
The assessment also considers MDG 3—the promotion of *gender equality and empowerment of women*—and its statistical relationship with lethal violence. A modest positive association exists between the share of women in wage employment within the nonagricultural sector and the ratio of girls to boys in primary and secondary education, in particular, and lethal violence (see Table 5.1).

With respect to MDG 4—the reduction in *child mortality*—the mortality rate of children under five is also significantly and positively associated with homicide rates (see Table 5.1). However rather than indicating a direct causal link, it is possible that this finding is simply underlining the fact that less developed countries (most of which feature inadequate water, hygiene, and health systems) may witness an increase in so-called excess deaths among the most vulnerable—as well as rising rates of lethal violence.

MDG 5 considers the progress in relation to *maternal health,* which is often measured as a function of declines in maternal mortality, a lower adolescent birth rate, and the quality of prenatal and natal care. Key indicators examined as part of this assessment include the adolescent birth rate and the proportion of births attended by skilled health personnel. Figure 5.5 reveals a very strong positive correlation between countries exhibiting a high adolescent birth rate and high rates of lethal violence, a finding also presented in Table 5.1. Specifically, each point shown in Figure 5.5 represents adolescent birth rates per thousand women (on the vertical axis) and lethal violence (on the horizontal axis) in every country for which data is available.

Figure 5.5 shows that countries exhibiting lower rates of lethal violence (on the horizontal axis) also register lower levels of adolescent pregnancy (on the vertical axis) and tend to cluster towards the bottom left of the graph. Countries featuring higher levels of lethal violence exhibit higher levels of adolescent pregnancy and tend to be found away from the origin, or intersection of the x and y axes. A potential causal explanation for this is that lethal violence interrupts access to health care and that large households tend to be less capable of investing in education and preparing children to anticipate risks of violence later in life. The statistical analysis also detects a strong positive correlation between infant mortality rates and homicidal violence as well as a strong negative association between the share of births attended by skilled personnel and homicidal violence.

With respect to MDG 6—*combating HIV/AIDS*— a significant relationship exists between lethal violence and HIV/AIDS (see Table 5.1).[36] Specifically, countries featuring a high percentage of people

FIGURE 5.5 Disaggregating adolescent birth rates and lethal violence, 1986–2009

■ Asia ■ Europe ■ Africa ■ Oceania ■ Americas

ADOLESCENT BIRTH RATE (PER 1,000 WOMEN)

HOMICIDE AND DIRECT CONFLICT DEATH RATE (PER 100,000 POPULATION)

NOTE: Squares correspond to homicide rates and triangles represent direct conflict deaths.

SOURCE: GBAV 2011 database and selected development and violence indicators

living with HIV/AIDS (ages 15–49) also tend to experience higher homicide rates. This positive correlation is especially significant in Africa, the Americas, and Asia.

The analysis also uncovers a relationship between MDG 7—ensuring *environmental sustainability*—and lethal violence. It suggests that countries with lower levels of lethal violence experience improved access to drinking water and sanitation facilities. Likewise, there is a negative association between the proportion of people living in slums and higher homicide rates, a finding echoed by the World Bank (2011).

Finally, a separate analysis of the relationships between direct conflict death rates and MDG progress reveals similar results to those cited above.[37] Indeed, higher reported direct conflict deaths are statistically correlated with:

■ higher rates of poverty (measured as the population below USD 1 and poverty gap ratio);

■ a lower share of women in wage employment in the non-agricultural sector;

■ lower enrolment in primary education and the ratio of girls to boys in primary education; and

■ lower HDI.[38]

Box 5.2 The relationships between lethal violence and development

Table 5.1 reviews correlations of key development indicators and lethal violence. The signs located in the right-hand column—positive and negative—indicate the direction and intensity of each association. The larger the sign, the closer the association between the two variables. The shades reveal the statistical significance of the association, from the 1 percent (dark, most significant) to the 5 percent significance level (light, less significant).

TABLE 5.1 The relationship between development indicators and lethal violence

Development indicator	Relationship to armed violence
Adolescent birth rate (per 1,000 women)	**+**
Births attended by skilled health personnel (percentage)	**–**
Children under five severely underweight (percentage)	=
Children under five mortality rate (per 1,000 live births)	**+**
Employment-to-population ratio, both sexes (percentage)	+
Infant mortality rate (0–1 year, per 1,000 live births)	**+**
People living with HIV, 15–49 years old (percentage)	+
Poorest quintile's share in national income or consumption (percentage)	**–**
Population below USD 1 per day (PPP, percentage)	+
Poverty gap ratio at USD 1 per day (PPP, percentage)	+
Proportion of the population using improved drinking water sources (total)	**–**
Proportion of the population using improved sanitation facilities (total)	**–**
Share of women in wage employment in the non-agricultural sector	+
Slum population as percentage of urban population (percentage)	=
Total net enrolment ratio in primary education (both sexes)	**—**
Youth unemployment rate, aged 15–24 (both sexes)	+
Youth unemployment rate, aged 15–24 (men)	+
Youth unemployment rate, aged 15–24 (women)	**+**
Human Development Index	**—**

Reviewing the relationship

The above analysis draws attention to a number of unsettling negative relationships between lethal violence and underdevelopment. Some of these associations are more robust than others. In some cases, the availability of additional data would allow for a more exhaustive assessment of patterns and trends. Nevertheless, the basic claim that high rates of lethal violence have negative implications across an array of MDG indicators is confirmed, offering a more nuanced assessment than has been provided elsewhere, including in the 2011 *World Development Report*. Moreover, this chapter finds that these relationships are not always straightforward: they are frequently complex, heterogeneous, and of varying intensity.

A number of established development agencies are convinced that violence has deleterious effects on MDG progress. For example, the OECD–DAC's International Network on Conflict and Fragility acknowledges how 'external and internal risk factors, alongside the continuum of conflict, armed violence and insecurity makes the MDGs more difficult to achieve' (OECD, 2010a, p. 4). In addition, the Dili Declaration on Peacebuilding and Statebuilding underlines how 'conflict and fragility are major obstacles for achieving the MDGs' and recognizes that 'it will be extremely difficult to achieve the MDGs in most fragile and conflict affected states by 2015' (IDPS, 2010, p. 1).[39]

Multilateral and bilateral aid agencies are pooling their investments where violence appears to be concentrated, including so-called fragile states (OECD, 2010b). The OECD estimates having channelled in excess of USD 34 billion in aid dollars towards these regions in 2009—more than one-third of total global spending on development.[40] Home to more than 1.5 billion people, these fragile

and conflict-affected states are generally lagging behind more stable developing countries in terms of MDG progress (Harttgen and Klasen, 2010, p. 29). Indeed, just one in ten fragile states is expected to achieve the goal of halving poverty and hunger—as compared to one in four developing countries.[41]

While the short-term costs of direct conflict deaths are considerable, the longer-term implications of conflict-related violence for development prospects are arguably just as extensive. The case of Mozambique is routinely presented to demonstrate how conflict-related violence can compromise educational services (Stewart and FitzGerald, 2001). The civil war during the 1980s demolished an estimated 45 per cent of the primary school network, largely through the killing, trauma, and displacement of teachers, administrative personnel, and students and through the destruction of physical infrastructure (Machel, 1996, p. 43).[42]

Debates over income inequality and the onset and severity of armed conflict and criminal violence tend to revolve around whether the former is a *cause*, an *outcome*, or both (Gates et al., 2010). Some conflict specialists contend that income inequality is a strong causal factor while others claim that the relationship is less significant (Collier and Hoeffler, 2000; Stewart, 2001; Gates and Murshed, 2005). Empirical studies investigating the linkages between income inequality and violent crime also frequently identify robust causal correlations (see Box 5.3). For example, comparative and cross-national research has examined positive associations between income inequality and homicide rates.[43] One recent review of homicidal violence in Brazil provides evidence that high homicide rates are similarly correlated with high levels of inequality (Waiselfisz, 2010, p. 148).

Photo ▶ A view of the slum in front of the Hilton hotel in São Paolo, March 2007. © Caetano Barreira/Reuters

Box 5.3 Lethal violence and MDG attainment in São Paolo

Although it has registered rapid economic growth and has consolidated its democracy, Brazil is confronting one of the highest rates of homicidal violence in the world. While there appear to have been some important reductions in recent years, homicide is especially prevalent in the country's major cities—Rio de Janeiro, São Paolo, and Brasília (see Figure 5.6). In response, and in view of the much-anticipated 2014 World Cup and 2016 Olympics, political and economic investment in integrated violence prevention and reduction activities is increasing.[44]

Made up of some 96 districts, São Paolo is one of the world's largest cities, with an estimated 20 million inhabitants. It is also known for its extreme rates of violence and inequality. Levels of homicidal violence in São Paolo are also higher than the global average: 34 districts feature high homicide rates of 10 per 100,000 and the remaining 62 register high homicide rates of approximately 19 per 100,000 (see Map 5.2).[45]

A number of clear trends emerge from an examination of the relationship between homicidal violence and MDG achievement in São Paolo for the year 2006 (see Table 5.2). For example, in districts that exhibited higher homicide rates, a higher percentage of the population lived on less than half the minimum wage. Moreover, residents of poorer slum areas or *favelas* were three times more likely to be living in districts experiencing high homicide rates. Likewise, districts reporting higher homicide rates also experienced slightly higher unemployment rates among young men and worse sanitary conditions.[46]

MAP 5.2 Homicide rates per 100,000 population by district, São Paulo, 2009

LEGEND:
Per 100,00 population

▇ › 10
▇ ‹ 10
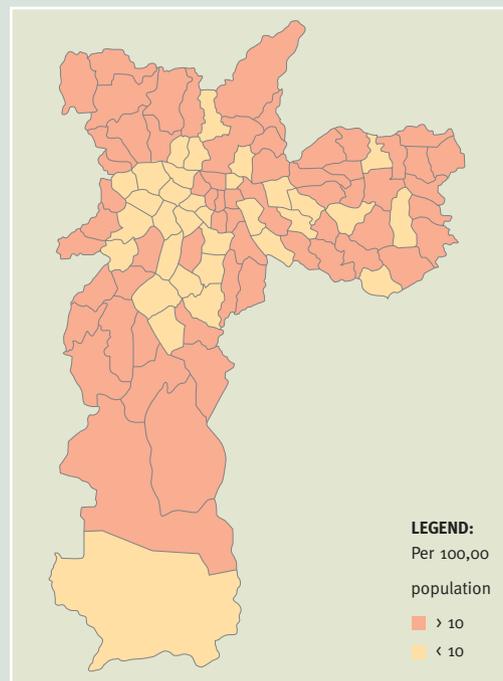
SOURCE: Muggah and Wennmann (2010, p. 26)

FIGURE 5.6 Homicide rate per 100,000 population in Brasília, Rio de Janeiro, São Paolo, and Brazil, 1992–2007[47]

▪ Brasília ▪ São Paulo ▪ Rio de Janeiro ▪ Brazil

HOMICIDE RATE PER 100,000 POPULATION
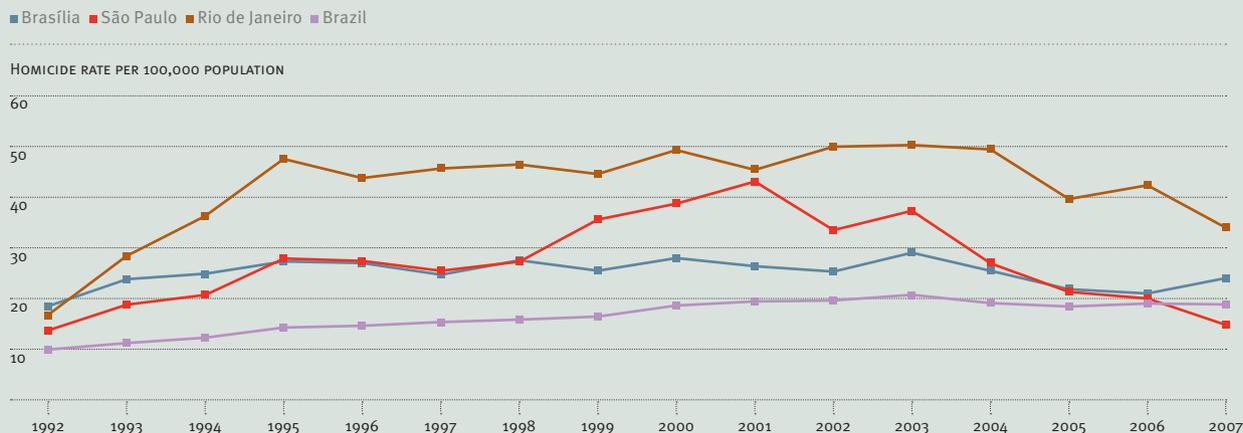
SOURCE: SIM (n.d.)

TABLE 5.2 MDG indicators and violence in two district clusters in São Paolo, 2006

MDG indicators	Sex	São Paulo	Districts with lower rates of homicide	Districts with higher rates of homicide
Population with an income of 50 per cent of the minimum wage per capita		20.5	11.4	24.3
Proportion of income held by the poorest 20 per cent		3.3	2.1	4.0
Percentage of 15-year-olds in the economically productive labour force	Men	86.8	89.9	85.5
	Women	81.5	81.4	81.5
Unemployment rate of 15–24-year-olds	Men	22.8	19.4	24.0
	Women	32.2	35.7	31.0
Percentage of literate 15–24-year-olds	Men	98.9	100.0	98.5
	Women	99.0	100.0	98.7
Percentage of households in slums		14.9	6.3	18.5
Percentage of the population without access to a water supply		0.8	0.3	1.0
Percentage of the population without access to sanitation		12.4	5.5	15.3

SOURCE: adapted from Muggah and Wennmann (2010, p. 27)

AUTHOR: Renato Sérgio de Lima

At the same time, income inequality and lower growth rates also appear to contribute to increases in violent crime across most countries (Lederman, Loayza, and Menéndez, 2002, p. 509). Drawing on panel data for almost 40 states, one assessment observes a link between increases in economic inequality and low economic growth rates on the one hand and homicide and robbery on the other (Demombynes and Özler, 2002, pp. 10–11). Yet some scholars contest these latter findings, contending that inequality is not a statistically significant determinant of violent crime. One researcher argues that inequality is not a statistically significant determinant if 1) country-specific effects are not controlled for and 2) the sample is artificially restricted to a small number of countries (Neumayer, 2005).

There is also considerable research on the association between unemployment and the incidence and intensity of armed violence. On the one hand, rising unemployment—particularly among young men—is perceived to contribute to their growing frustration and idleness, as the case of South Africa shows (see Box 5.4). In other countries, unemployment and other factors reportedly enhance the risk of youth recruitment into gangs and other armed groups (McIlwaine and Moser, 2001; Small Arms Survey, 2010; Jaffe, 2010). In countries affected by a high prevalence of violence, these relationships intensify.[48] The UN Office on Drugs and Crime and the World Bank have stressed how high rates of homicide can in turn hamper GDP growth, creating knock-on effects in relation to unemployment, especially in Latin America and the Caribbean (World Bank and UNODC, 2007; Bourguignon, 1999).[49]

Box 5.4 South Africa: violence and development

Despite the momentous decline in political violence after South Africa's transition to democracy in 1994, the country continues to experience one of the highest murder rates on the planet. Indeed, a series of factors place South Africa at statistical risk of high levels of homicidal violence. These include a low HDI score (ranked 129 out of 189 countries in 2010), persistent income inequality, high levels of youth unemployment, high rates of HIV/AIDS (one of the highest in the world at more than 18 per cent), and high adolescent birth rates.

During 2008–09 the South African Police Service reported a homicide rate of 37.3 per 100,000 (SAPS, 2009, p. 5). With young men making up the bulk of offenders and victims of criminal violence, firearm homicide has been singled out as the leading cause of death for young men aged 15–21 (Fleshman, 2001). More than half of all homicides in the country are committed with firearms—instruments described routinely by scholars in

the country as symbols of social power and dominance (CSVR, 2008). Violent crime is typically characterized by encounters between people who know each other as friends, relatives, or acquaintances.[50]

A comparison of the relationships between lethal violence and underdevelopment across South African provinces reveals various links. As shown in Table 5.3, the metropolitan areas of Gauteng and Western Cape are plagued by high levels of inequality and high levels of violence. When compared, both provinces exhibit a relatively low level of absolute poverty—measured in terms of people who live below ZAR 283 (about USD 37) per month but experienced a significant increase in inequality over the period 1995–2005. Such a trend is also apparent in Limpopo province, which features one of the highest rates of poverty in the country but one of the lowest rates of murder, while inequality levels declined between 1995 and 2005 (Muggah and Wennmann, 2010, p. 33).

TABLE 5.3 Violence and development indicators in South Africa, various years

Province	Intentional homicide rate per 100,000 population (2008)[51]	People living below ZAR 283 (USD 37) per month (2008, in %, rounded)[52]	Gini coefficient[53]		Unemployment	
			1995[54]	2005[55]	2008, in %[56]	2009, in %
Eastern Cape	49.5	29.0	0.65	0.64	25.2	27.0
Free State	31.6	16.0	0.66	0.65	22.6	25.3
Gauteng	37.2	6.0	0.54	0.65	20.7	25.7
Kwazulu-Natal	47.0	33.0	0.63	0.67	20.8	19.2
Limpopo	14.2	34.0	0.63	0.58	28.9	26.9
Mpumalanga	25.1	28.0	0.58	0.67	23.1	26.6
Northern Cape	36.5	27.0	0.65	0.62	21.6	24.9
North West	27.4	23.0	0.63	0.64	25.7	27.0
Western Cape	44.6	9.0	0.58	0.69	16.9	21.5
South Africa (national)	37.3	22.0	0.64	0.69	21.9	24.3

SOURCE: Muggah and Wenmann (2010, p. 33)

According to some social scientists, the extent of the relationship between armed violence and underdevelopment is often mediated by a society's stock of 'social capital'. Social capital is variously defined, but it is held to encompass 'features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions' (Putnam, 1993).[57] Ultimately, social capital refers to aspects of social relationships that enable collective action. While not all social capital is 'positive'—some can even be perverse in the form of gang membership, cartels, and mafia-like organizations—there is considerable anthropological evidence of the negative effects of armed violence on social networks, community reciprocity, and collective action (McIlwaine and Moser, 2001).

On the one hand, violence-plagued communities may register a comparatively high level of 'bonding' social capital, referring to strong ties within relatively homogenous groups. But 'bridging' social capital—the kind that links otherwise disparate groups or individual together—can erode rapidly. Moreover, 'linking' social capital—which ties individuals and groups to political and economic elites—can be reconfigured and strengthened in harmful and often destructive ways. Armed violence can play a critical and often detrimental role in transforming the stock of social capital, thwarting the formation of relations essential for building meaningful human development.

Monitoring the relationship

An ongoing and accurate accounting of the effects of armed violence on development progress and outcomes is an essential, yet challenging, agenda. It is also potentially controversial in some coun-

tries, where the topic remains acutely sensitive and subject to intense politicization. The development sector itself has encountered challenges in monitoring the MDGs. For example, repeated meetings of the MDG monitoring group have highlighted the persistent gaps in knowledge and the importance of renewed investment in international, regional, national, and municipal monitoring tools and systems to collect and analyse basic poverty, income, education, and maternal health data on a routine basis.[58] There is also a strong case to be made for integrating armed violence into periodic international and national MDG assessments, as such evaluations could constructively highlight key challenges among low- and middle-income countries.

A first priority is the strengthening of national and municipal surveillance and data collection systems in countries affected by and recovering from armed conflict and high rates of criminal violence. While the provision of such support may require considerable investment and be time-consuming, it is nevertheless vital. Fortunately, there are impressive examples of comprehensive and integrated reporting and monitoring mechanisms to appraise trends in armed violence. Regardless of whether they are described as crime observatories, conflict early warning systems, or injury surveillance mechanisms, they offer important examples of systems that can be replicated and scaled up (see Box 5.5).

Public calls for a mechanism to better monitor and track the relationship between violence and MDG achievement are not new. Specifically, the UN Secretary-General's report on *Promoting Development through the Reduction and Prevention of Armed Violence* emphasizes the need to standardize the goals, targets, and indicators to monitor and measure armed violence until 2015 (UNGA, 2009, p. 19). The Secretary-General also

Box 5.5 Global trends in monitoring armed violence

Public health and development agencies are devoting increasing attention to evidence-based approaches to armed violence prevention and reduction. The World Health Organization has released several seminal studies since 2002 through its Violence and Injury Prevention programme (WHO, n.d.b).[59] Moreover, the WHO-supported Violence Prevention Alliance, a network of more than 50 public health and community development agencies, has also shed light on opportunities and challenges associated with interventions to promote safety.[60] More recently, in 2009 and 2011, the OECD–DAC drew attention to the wide range of related direct and indirect programmes and projects under way around the world.[61]

There are many different kinds of armed violence monitoring systems (AVMS) operating across the globe. In many countries, both public entities and non-governmental organizations have established surveillance and survey-based monitoring systems, often in partnership.[62] Many have a public health or crime
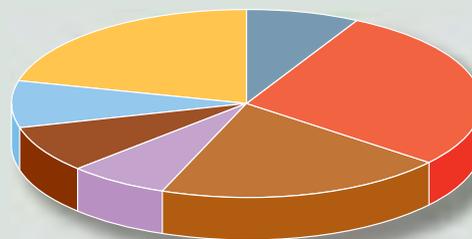
prevention orientation and most are intersectoral or interdisciplinary in approach. All of them tend to feature at least three basic characteristics: 1) they routinely gather timely data on key variables; 2) they systematically analyse data over time; and 3) they disseminate analysis with a view to informing policy and programming (Gilgen and Tracy, 2011, p. 12; see Figure 5.7).

Most AVMS coordinate and harmonize information from disparate public, private and non-governmental entities (Carrière, 2008; CISALVA, 2008). In best-case scenarios they can facilitate coordination and communication between elected officials, police, health, educational and social services, researchers and activists, and civil society organizations. A recent study shows that most AVMS-type efforts collect data on common indicators of armed violence—including lethal violence (Gilgen and Tracey, 2011).

While mortality is the most widely monitored indicator, AVMS systems generally collect and analyse data on non-fatal injuries (including sexual violence) as well as incidents arising from common assault and road traffic accidents (see Figure 5.8). It is important to note that most AVMS collect data from at least one government source, such as criminal justice and vital registration records from hospitals and mortuaries (see Figure 5.9). Thus, the effectiveness of accurate data collection depends in large part on a government's willingness and ability to collect and disclose accurate figures.

FIGURE 5.7 The core attributes of an armed violence monitoring system

FIGURE 5.8 Violence indicators tracked by AVMS initiatives[63]

FIGURE 5.9 Data sources used by AVMS, as percentage


SOURCE: Gilgen and Tracey (2011)

PHOTO ▲ Following a fire, informal settlers of the Laperal compound in Manila throw stones and bottles as they clash with police and members of a demolition team who are taking part in an effort to relocate them, April 2011. © Cheryl Ravelo/Reuters

FIGURE 5.10 An inter-agency armed violence monitoring group

- Data from public and private partners
- Data from national and municipal governments
- Data from international organizations
- Data from research institutes and universities
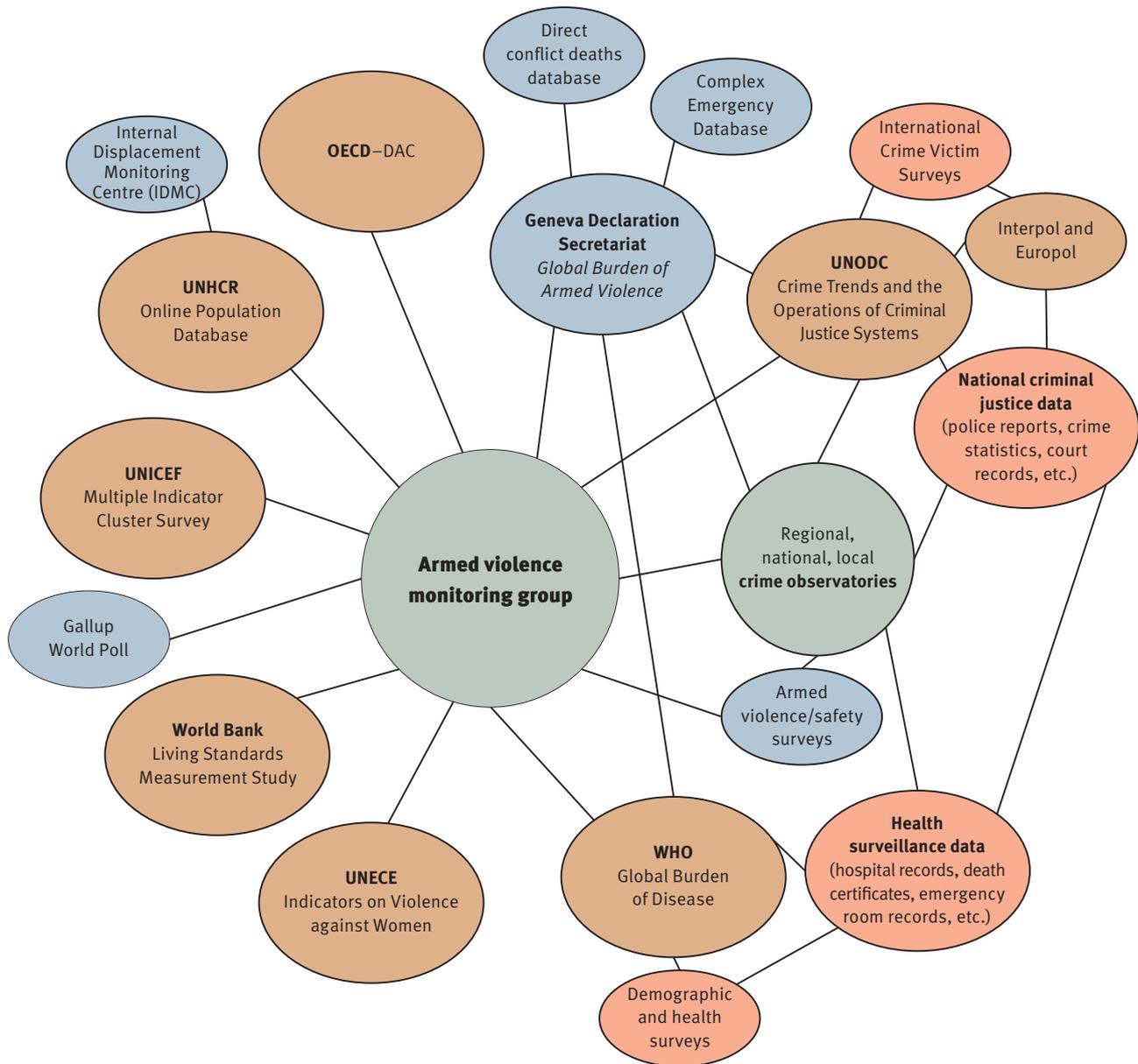
SOURCE: adapted from Gilgen, Krause, and Muggah (2010, p. 24)

stresses how the MDG review process offers an opportunity to integrate security-related themes into ongoing efforts to achieve the MDGs (p. 19). He is silent, however, on the most appropriate way to structure a monitoring system so that it can more effectively assist governments and civil society actors on the ground.

The current model of monitoring and measuring trends in violence relies on autonomous public agencies (such as health, police, and social services) working independently and periodically reporting to the United Nations. This model is fast being overtaken by practical needs on the ground. As demonstrated above, a more effective effort to track the specific relationships between armed violence and MDG attainment will call for an ongoing inter-agency and intersectoral approach. It will require data collection activities focused not exclusively on issues of violence and victimization, but, in many cases, on trends in primary and secondary education, health, social welfare, and other issues (Gilgen, Krause, and Muggah, 2010).

A functional international monitoring mechanism would need to build on a wide number of credible data-gathering systems around the world. Many armed violence monitoring systems have already been established at the regional, national, and municipal levels in an effort to better document trends in victimization and inform public policy interventions. Often these actors address overall national safety concerns while others operate through a network of sub-national nodes in order to track trends in intentional violence or other forms of external injury. Taken together, these systems can and do serve as an invaluable service for decision-makers, programme managers, and

PHOTO ▶ A student writes on the blackboard at the St. Kizito Institute in Bujumbura, one of the few schools in Burundi where disabled children can receive an education.
© Dieter Telemans/Panos Pictures

practitioners who work in the field of crime and violence prevention.

One way to strengthen global armed violence monitoring efforts and improve standards in data collection would be through the establishment of a global inter-agency armed violence monitoring group or task force. States already play a central role in global efforts to collect information on core indicators such as homicide through their departments of statistics; they would need to play a primary role in any monitoring group. But to generate more comprehensive and refined information and analysis, the group would also need to forge partnerships with agencies from the health, criminal justice, conflict studies, and development sectors. An example of an ideal type multi-nodal global monitoring group is set out in Figure 5.10.

Such a monitoring group would be responsible for tracking the incidence, causes, and trends in victimization and development. It would also usefully establish and disseminate standards and support networks in collecting data. Likewise, technical experts from international and non-governmental agencies would need to play a core role in gathering and consolidating data and undertaking analysis. The participation of organizations such as UNDP, the UN Office on Drugs and Crime, the World Health Organization, and the World Bank are critical in this regard. Meanwhile, established research institutions—from think tanks to academic research centres—are also invaluable partners in such an endeavour.

Data collection would be directed on the basis of a consolidated list of targets and indicators. Minimum indicators to measure the dependent variable—armed violence—include the number of direct and indirect conflict deaths, the prevalence of homicide, and the percentage of change in bilateral development assistance to armed

violence prevention and reduction programmes. Building on these and other ongoing data collection frameworks, the working group would issue routine outputs and highlight critical information gaps and needs on the way armed violence is affecting MDG progress (Gilgen, Krause, and Muggah, 2010, p. 25).

Conclusion

The costs and consequences of armed violence on development are considerable and wide-ranging. They include direct visible impacts such as death, injury, and damage to assets and property as well as indirect effects such as the increased, recurrent costs of law enforcement and justice delivery, disruption of social services, lost economic opportunities, and the undermining of governance more generally (Skaperdas et al., 2009, p. 17; Geneva Declaration Secretariat, 2008, pp. 89–108).

The analysis presented in this chapter demonstrates emphatically that the residents of low- and medium-income countries bare a grossly disproportionate share of the global burden of armed violence. More specifically, lethal violence in particular is associated with low achievement of human development and MDGs over time. The chapter thus draws attention to how a large cluster of countries is effectively trapped in cycles of armed violence and under-development.

The chapter makes a strong case to better integrate the issues of armed violence into routine MDG assessments. Indeed, a statistical assessment shows how countries exhibiting high and very high levels of homicide report comparatively low gains in relation to reducing extreme poverty and hunger (MDG 1), achieving universal primary

education (MDG 2), reducing child mortality (MDG 4), and improving maternal health (MDG 5). More optimistically, the chapter also observes that high-income countries experience lower rates of armed violence. Moreover, countries that register low rates of violence also appear to achieve disproportionately higher gains in relation to poverty reduction, nourishment, education, health, and other areas of human welfare.

The mutually reinforcing effects of positive investments in development and low rates of violence are a powerful insight—one that the development sector is increasingly acknowledging. While knowledge gaps remain, in most cases owing to data limitations, an irrefutable picture is nevertheless emerging. There is a compelling and persistent two-way negative relationship between armed violence and development. This straightforward finding amounts to a clarion call to the development sector to take action to promote the prevention and reduction of armed violence as a matter of urgency. 🔧

Abbreviations

AVMS	Armed violence monitoring system
GDP	Gross domestic product
HDI	Human Development Index
MDG	Millennium Development Goal
OECD–DAC	Organisation for Economic Co-operation and Development–Development Assistance Committee
UNDP	United Nations Development Programme

Endnotes

1   See OECD (2009).

2   See CHS (2003) and Sen (2008).

3   See, for example, World Bank (2011), HiCN (n.d.), and MICROCON (n.d.).

4   See, for example, Bozzoli, Brück, and Sottsas (2010) and Stewart and FitzGerald (2001).

5   The annual estimate is based on global data for the period 2004–09.

6   This chapter builds on initial findings presented in Muggah and Wennmann (2010).

7   See, for example, OECD (2009).

8   See, for example, Ayres (1998, p. 24), who describes violence as 'the undue exercise of physical force'. See also Moser and Holland (1997) and Moser (2004) for participatory assessments of violence.

9   There is considerable literature on the cognitive, behavioural, and psychological impacts of witnessing or being subject to violence. The political and psychological impacts of violence, including on children and youths, are reviewed by Dubow, Huesmann, and Boxer (2009). Cairns (1994) and Tremblay, Pedersen, and Errazuriz (2009) focus on the effects of political violence on the development of aggressive behaviour and cognitive impairment. Psychological distress, depression, and anxiety in different populations are also addressed in urban violence cases by Mari et al. (2008) and for homicide survivors specifically by Miller (2009).

10   Moser (2004), for example, identifies at least four categories of violence—political, institutional, economic, and social—and a lexicon of attributed characteristics and manifestations. Rather than ascribing a fixed typology, she envisions these violence categories as overlapping and on a continuum.

11   See, for example, UNDP (1990, p. 10).

12   There are 60 official indicators for monitoring progress of all eight MDGs. The official list of MDG indicators is available at UNSD (n.d.a). These 60 indicators are disaggregated into 171 specific variables, which are available at UNSD (n.d.b). The entire MDG database can be downloaded at UNSD (n.d.c). The 21 specific MDG variables used in this analysis are: 1) population below USD 1 per day (PPP, percentage), 2) poverty gap ratio at USD 1 per day (PPP, percentage), 3) poorest quintile's share in national income or consumption (percentage), 4) employment-to-population ratio (15+, total, percentage), 5) children under five moderately or severely underweight (percentage), 6) children under five severely underweight (percentage), 7) unemployment, youth total (percentage of total labour force ages 15–24), 8) unemployment, youth male (percentage of male labour force ages 15–24), 9) unemployment, youth female (percentage of female labour force ages

15–24), 10) literacy rate (youth total, percentage of people ages 15–24), 11) total net enrolment in primary education, 12) share of women employed in the non-agricultural sector (percentage of total non-agricultural employment), 13) ratio of girls to boys in primary and secondary education (percentage), 14) mortality rate (under five, per 1,000), 15) mortality rate (infant per 1,000 live births), 16) adolescent fertility rate (births per 1,000 women ages 15–19), 17) births attended by skilled health staff (percentage of total), 18) prevalence of HIV (total, percentage of the population ages 15–49), 19) improved water source (percentage of the population with access), 20) improved sanitation facilities (percentage of the population with access), and 21) slum population (percentage of the urban population).

Three of the World Bank's World Development Indicators are used: 1) gross national income per capita, 2) poverty headcount ratio at the national poverty line, and 3) ratio of girls to boys in primary and secondary education.

The UNDP indicator used is the Human Development Index.

For details on indicators and definitions used, see the online methodological annexe at www.genevadeclaration.org.

13   See Alda (2010), Altbeker (2005), LaFree (2000), Leggett et al. (2005), and Muggah (2005).

14   See UNHCR (n.d.).

15   See the online methodological annexe at www.geneva declaration.org.

16   The following section applies a range of statistical methods such as correlation analysis and econometric regressions. For details, see the online methodological annexe at www.genevadeclaration.org.

17   For example, gross national income per capita is widely available, with 173 countries reporting 1,573 yearly data points. Other development indicators that are readily accessible include adolescent birth rate and employment-to-population ratio. By way of comparison, only 52 countries reported on the ratio of girls to boys in primary education, with only 822 data points. Further, the poverty headcount ratio and the national poverty line data is only available for a limited number of countries.

18   See the online methodological annexe at www.geneva declaration.org.

19   The classification of countries according to HDI is available at UNDP (n.d.).

20   These ranges correspond to the mean and the mean plus one standard deviation of the world distribution of homi-

cide rates in 1986–2009. For additional information on the descriptive statistics of homicide rates, see the online methodological annexe at www.genevadeclaration.org.

21   This graph excludes 12 UN member states (for which HDI classification is lacking): Iraq, Kiribati, Marshall Islands, Micronesia, Monaco, Nauru, North Korea, Palau, San Marino, Somalia, Tuvalu, and Zimbabwe.

22   Overall, 18 countries exhibit very high homicide rates and 49 feature high homicide rates. The countries with very high homicide levels are: Belize, Brazil, Central African Republic, Colombia, Democratic Republic of the Congo, Dominican Republic, El Salvador, Equatorial Guinea, Guatemala, Honduras, Jamaica, Lesotho, Malawi, Republic of the Congo, St. Lucia, South Africa, Swaziland, and Venezuela. The countries with high homicide levels are: Albania, Angola, Bahamas, Barbados, Belarus, Benin, Botswana, Burundi, Cameroon, Chad, Côte d'Ivoire, Dominica, Ecuador, Eritrea, Estonia, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, Guyana, Haiti, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Mali, Mauritania, Mexico, Mongolia, Mozambique, Namibia, Nicaragua, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Russian Federation, St. Kitts and Nevis, St. Vincent and the Grenadines, Sudan, Suriname, Tanzania, Thailand, Timor–Leste, Togo, Trinidad and Tobago, and Uganda.

23   These findings emerge from a regression logit analysis in which the dependent or left-hand side variable is a dichotomous variable, taking the value of one when a country shows an improvement in the indicator during the 2000–09 period. In this way, it is possible to capture the size and statistical importance of potential factors affecting the likelihood of HDI change. The model parameters were estimated using maximum likelihood procedures. Robust heteroscedasticity-corrected standard errors were also used.

24   By using a zero-score regression analysis, it is possible to gauge whether the normalized homicide level has an effect on the normalized HDI level after controlling for other influences. A z-score regression was used on the normalized HDI level on the levels of lethal violence as measured in quintiles.

25   The GBAV 2011 database features 29 'main' armed conflicts in countries that were selected on the basis of an average of the levels and rates of direct conflict deaths between 2004 and 2009. Consult the online methodological annexe at www.genevadeclaration.org for more information.

26   This study uses the World Bank's classification of countries by income group. See World Bank (n.d.a)

27   The World Bank classifies all member countries (187) and all other states and territories (28) with populations of more than 30,000 (215 total); income information is available for 207 of them. Homicide data is not available for American Samoa, Aruba, Cayman Islands, French Polynesia, Greenland, Kosovo, Macao, Mayotte, Netherlands Antilles, New Caledonia, Northern Mariana Islands, Palau, San Marino, or the US Virgin Islands.

28   The United States is an interesting case: the country experienced roughly 32,300 firearm-related deaths annually between 1980 and 2006. This figure suggests that firearm-related injuries are the second leading cause of 'external' mortality after motor vehicle accidents. The 2006 age-adjusted death rate from firearm injury was 10.2 per 100,000 population with an estimated non-fatal injury rate of 23.6 per 100,000 (FICAP, 2009, p. 5). On the other hand, the Bahamas, Barbados, Estonia, and Trinidad and Tobago are non-OECD high-income countries with a high homicide rate and Equatorial Guinea, the Netherlands Antilles, and Puerto Rico are the only high-income non-OECD countries displaying very high homicide rates.

29   Correlations are calculated using Pearson's correlation, Spearman's rho, and Kendall's tau. Only statistically significant findings are reported.

30   The analysis does not consider any indicators or variables for MDG 8 (develop a global partnership for development).

31   For example, countries as varied as the Gambia and the Solomon Islands do not exhibit above-average rates of violence.

32   The World Bank also confirms the relationship between poverty and homicide levels. Correlating the poverty headcount ratio according to the national poverty line (percentage of population) reveals a positive significant correlation with homicidal violence (World Bank, 2011).

33   Field (2010, p. 6) detects a significant negative relationship between an increase in homicide rates and the 'poorest quintile's share in national income or consumption percentage'.

34   The negative correlation between the two variables is evident by visual inspection and is confirmed by statistical tests.

35   In contrast, with respect to literacy rates, the analysis does not yield any direct robust statistical findings.

36   The analysis does not consider the relationships between lethal violence and malaria or other diseases. Since malaria indicators (such as malaria per 100,000 and malaria death rates per 100,000) are only collected in malaria-affected countries, cross-country comparisons are not possible outside of those zones.

37   The analysis is based on data for 29 'main' armed conflicts in 2004–09 (GBAV 2011 database).

38   All of these findings coincide with those related to homicidal violence and probably reinforce these effects in general; as such, they are not presented here as separate effects.

39   The Dili Declaration represents a consensus between various government and civil society representatives from both developing and developed countries and is the outcome of a meeting held in Timor–Leste on 9–10 April 2010. To build consensus and put international actors on the right track towards development responses that are both effective and tailored to the context of conflict-affected and fragile states, the Dili Declaration identifies seven goals for peacebuilding and state-building; it also outlines concrete commitments for governments and international assistance to improve support in these processes. See IDPS (2010, p. 1).

40   See OECD (2010a; 2010b). It is worth noting, however, that some 51 per cent of this spending was concentrated in 6 of 43 'fragile states', representing less than three-quarters of the total population of these same countries. Afghanistan and Iraq accounted for most increases since 2000.

41   See, for example, World Bank (2011).

42   Not all children were affected in the same way by the war. Those living in refugee camps administrated by international relief organizations had a better access to educational services than during peacetime. In contrast, internally displaced or handicapped children were completely cut off from any schooling (Hanemann, 2005).

43   See Neapolitan (1999). A similarly robust relationship has been found between inequality and health. See also WHO (2008).

44   See Muggah and Wennmann (2011).

45   With reference to the distribution of homicide committed with firearms, the two groups of districts featured rates of 7.0 and 12.4 per 100,000, respectively.

46   There were no reported or significant variations between low and high homicide rate districts when compared with other indicators, including HIV/AIDS-related mortality, infant mortality, percentage of teenage mothers, and births registering low birth weight.

47   Consult SIM (n.d.).

48   For example, private firms are frequently less inclined to invest and to generate new jobs where crime rates are high (Krkoska and Robeck, 2006; Mihalache, 2008).

49   The negative effects of armed conflict on employment through the destruction of industry and infrastructure, as well as through the displacement of people, are uncontested.

50   Recent statistics indicate that up to 82 per cent of murders and 59 per cent of attempted murders occur between people who know each other. See SAPS (2007, p. 3).

51   Data drawn from SAPS (2009, pp. 24–26).

52   Data drawn from South Africa (2009, p. 26).

53   The Gini coefficient of inequality assigns values between 0 and 1 to each country, with 0 representing absolute equality and 1 representing absolute inequality.

54   Data drawn from Bhorat and van der Westhuizen (2009, p. 16).

55   Data drawn from Bhorat and van der Westhuizen (2009, p. 16).

56   Data drawn from SAPS (2009).

57   See also Coleman (1988) and Bourdieu (1986) for a thorough review of social capital.

58   In its *Millennium Development Goals Report 2010* , the United Nations asserts: 'Improved data and monitoring tools are crucial for devising appropriate policies and interventions needed to achieve the MDGs. Although some progress is being made, reliable statistics for monitoring development remain inadequate in many poor countries, and the challenge of building in-country capacity to produce better policy-relevant data is enormous' (UN, 2010, p. 74).

59   See WHO (n.d.a) for a review of Violence and Injury Prevention publications.

60   See WHO (n.d.b) for a review of Violence Prevention Alliance activities.

61   See Muggah and Wennmann (2011).

62   Better-known observatories include the Violence Prevention Alliance's crime observatory in Jamaica; the Madrid security observatory; the Bogotá observatory; municipal observatories in El Salvador, Guatemala, and Panama; the regional observatory on security policies in Italy; Central America's violence observatory; and the Observatoire National de la Délinquance in France. See Gilgen and Tracey (2011) for a review of armed violence monitoring systems.

63   See Gilgen and Tracey (2011, p. 24).

64   On the involvement of the private sector in crime prevention, see Capobianco (2005).

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