September 2010

GENEVA DECLARATION
ON ARMED VIOLENCE AND DEVELOPMENT

# More Violence, Less Development

## Examining the relationship between armed violence and MDG achievement

**Table of contents**

**Acknowledgements**

This report represents a joint research effort of a number of researchers and research teams. Key contributors include Julie Abbass (Independent consultant), Katherine Aguirre (Conflict Analysis Resource Centre - CERAC), Vanessa Barolsky (Human Sciences Research Council - HSRC), Chris Fields (Dalhousie University), Mayra Iglesias (CERAC), Caterine Laverde (CERAC), Manuel Moscoso (CERAC), Jorge A. Restrepo (CERAC), Renato Sérgio de Lima (Brazilian Forum on Public Safety – BFPS), Philipp Stucki (Small Arms Survey - SAS), Ana Maura Tomesani (BFPS), Adriana Villamarín (CERAC), and Prescilla Wamucii (HSRC). Comments were also received by Small Arms Survey personnel, including Anna Alvazzi del Frate and Keith Krause.

The report was edited and overseen by Achim Wennmann (SAS) and Robert Muggah (SAS). The report also received substantive inputs from Dr. Beth Daponte, Koen de Groof, Paul Eavis (UNDP) and Camilla Sugden (DFID). Additional insights were supplied by Paul Ladd, Usman Iftikhar, and Sara Vangaalen of UNDP's Bureau for Development Policy (BDP) and Janey Lawry-White of UNDP's Central Strategy and Policy Cluster (CSPC). The study was supported by the United Nations Development Programme (UNDP) and the Geneva Declaration Secretariat. Special thanks are due to the Governments of Norway, Switzerland and the UK for their continuous intellectual and financial support. The views expressed in this publication do not necessarily represent those of the United Nations, UNDP or the Governments of Norway, Switzerland and the UK.

**Executive Summary**

Armed violence constitutes an extraordinary challenge for the development sector. While its effects are especially concentrated in lower and middle-income settings, rich and poor alike are killed and injured in inner city neighborhoods, suburbs, towns and pastoral areas. While perpetrated and experienced predominantly by young men, armed violence affects males and females. What is more, handguns and assault rifles feature in roughly two thirds of all homicidal violence around the world.

The calculus of armed violence is sobering. At least 740,000 people die directly or indirectly as a result of armed violence every year. A relatively small proportion of these deaths – approximately one third – can be attributed to armed conflicts and preventable illnesses affecting the vulnerable in war zones. Yet the vast majority of violent deaths occur in lower- and middle-income settings otherwise unaffected by warfare. Irrespective of where armed violence occurs, victims and survivors are likewise affected by pain, suffering and trauma long after the shooting stops.

The following report examines the complex relationship between armed violence and development, including in relation to the Millennium Development Goals (MDGs). Taken together, the study assesses the relative importance of armed violence as an obstacle to development. The report is motivated by a growing awareness among UN member states, UN agencies and a wide range of civil society actors of the destructive effects of armed conflict and criminality on human development. It offers an important first step to build an evidence base to test what is intuitively known to policy makers and practitioners.

The report – ***More Violence, Less Development*** – offers an innovative statistical assessment of the two-way association between armed violence and under-development. It mobilizes comprehensive information from the Geneva Declaration Secretariat's Armed Violence Database (AVD), the United Nations Development Programme (UNDP) Human Development Index (HDI) and the UN MDG monitoring process. While neither of these datasets is exhaustive, they nevertheless offer amongst the most robust comparative stores of longitudinal information on armed violence and development in the world.

The study demonstrates how armed violence obstructs development across many fronts. In a sentence – it severely compromises the skills and assets that are essential to living a productive life and shortens planning and investment horizons. But it also takes the debate further than this. It highlights how underdevelopment – expressed as unemployment or income inequality – tends to be correlated with higher rates of armed violence. Meanwhile, developmental progress tends to be associated with lower rates of armed violence.
.
Among its key findings are:

- **The relationships between armed violence and development are complex and require careful definition of key terms and precise statistical analysis.** Even so, the study finds that areas experiencing comparatively high rates of conflict-related and homicidal violence tend to experience declining levels of progress in relation to both human development as measured by poverty, income and the achievement of specific MDG goals.

- **Countries with low homicide rates make more rapid human development gains than countries with higher homicide rates.** Specifically, countries featuring lower average homicide rates had a roughly 11 per cent higher chance of

achieving improvement in the Human Development Index (HDI) than countries registering higher homicide rates.

- **Countries reporting high levels of homicide are statistically associated with reduced progress across specific MDG Goals.** Specifically, high rates of homicidal violence contributes to dramatic reductions in eradicating extreme poverty, youth unemployment and hunger (MDG 1), increased primary enrolment ratios (MDG2) and reduced infant mortality and adolescent birth rates (MDG 4 and 5);

- **Meanwhile, higher levels of development tend to be associated with reduced levels of homicidal violence.** Specifically, countries reporting proportionately lower levels of income inequality and unemployment feature comparatively lower levels of homicide. By way of contrast, lower levels of human development and income occurs in parallel with high and very high rates of armed violence; and

- **The monitoring of armed violence should be integrated into assessments of MDG progress and achievement.** An armed violence monitoring group could be established featuring multidisciplinary and multi-sector partnerships. These efforts would strengthen national data gathering capacities and regional armed violence systems.

Divided into four parts, the report presents preliminary findings from a statistical analysis of key indicators of armed violence and 20 MDG variables. It then considers the extent to which the findings are supported (or not) in the social scientific literature. The paper also presents qualitative findings from four case studies of low and middle-income contexts – Burundi, Brazil, Lebanon and South Africa. It concludes with an examination of how monitoring of armed violence could be integrated into a regular review of the MDGs. Taken together, the report confirms the emerging findings of the *World Development Report* (2011) and the UN *Secretary General's Report* (2009) and offers a powerful case for making armed violence prevention and reduction a central plank of the war on poverty.

**Glossary of terms**

**Armed violence:** The intentional use of force (actual or threatened) with arms or explosives, against a person, group, community, or state that undermines people-centered security and/or sustainable development.[1] This working definition covers armed violence perpetrated in both armed conflict and non-conflict settings.[2]

**Armed conflict:** A contestation or dispute that concerns government and/or territory where the use of armed force between two or more organized parties results in at least 25 battle-related deaths a year.[3]

**Conflict country:** A country experiencing an armed conflict (as defined above). Countries affected by conflict can be involved in regional, international, and intra-state disputes.

**Direct conflict deaths:** The total number of battle-related[4] and violent civilian deaths resulting from an armed conflict. These deaths are the direct result of fighting or conflict-related armed violence, but do *not* include those deaths that are an indirect consequence of an armed conflict (deaths caused by malnutrition, disease or other causes that would not have occurred in the absence of the armed conflict). [5] Direct conflict violence can be measured in terms of a direct conflict death rate per 100,000 people.

**Homicide:** The unlawful death purposely inflicted on a person by another person. The term 'homicides' includes both so-called intentional[6] and unintentional[7] homicides. Homicide is measured in terms of homicide rates per 100,000 population.[8]

**Homicide levels:** Homicide levels can be classified as low, high, and very high considering the distribution of all available yearly observations of homicide rates per 100,000 at the country level (with average global rate of 7.24). A low homicide rate is below 7.24, a high homicide rate is above 7.24, and a very high homicide rates is above 18, equivalent to one standard deviation above the mean of the distribution.

**Human development:** Refers to situations where individuals can reach their full potential and lead productive, creative lives in accord with their needs and interests. Human development values achievements such as greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities.[9]

**Income inequality:** Refers to the extent of disparity between high income and low income as expressed in the percentage share of income held by the poorest fifth of the population. Income inequality can also be measured by the poverty gap ratio (percentage of people under 1 USD PPP a day).

**MDG achievement:** Progress towards the MDGs is measured through 21 targets and 60 official indicators. A list of targets and indicators is available through the MDG Monitor.[10]

**Poverty:** The percentage of population below an income equivalent to 1USD per day at Purchasing Power Parity (PPP) which requires adjusting income by different purchasing power of currencies in each country. Poverty can also be measured by the poverty headcount ratio.

**Risk factors of armed violence:** From the perspective of a state there are external and internal risk factors. External risk factors include, inter alia, economic and environmental

crises, cross-border trafficking, external interference; internal risk factors include rising economic inequality, marginalized youth, gender based discrimination, legacies of violence, presence of armed groups, availability of weapons, and trauma.[11]

## Introduction

Living free of fear is a fundamental development aspiration – it is also an objective that has thus far received comparatively limited attention in debates on the achievement of the Millennium Development Goals (MDG).[12] Notwithstanding the international community's preoccupation with major challenges such as climate change, natural disasters, financial crises, and global epidemics, the silent emergency of armed violence has failed to capture the imagination of world leaders and development partners. Part of the reason for this is that the relationships between armed violence and development are largely hidden from view.

The fact is that those who are personally witness to, or victims or survivors of, shooting and physical violence are well aware of the pain, suffering and trauma it generates. They understand how a death in the family has spiral effects shaping everything from emotional wellbeing to financial stability and access to credit. Along with local public and private authorities, they recognize how armed violence disables the basic political, social and financial institutions required to ensure stability. The risk and experience of armed violence shortens planning horizons and undermines the skills and assets necessary for leading a productive life. It is the particular manifestation and intensity of armed violence and its relationship with people's quality of life that are key variables shaping MDG achievement.

This report makes an urgent call for governments and development agencies to elevate the causes and consequences of armed violence to a new strategic level. Although crafting meaningful progress in human development takes years and decades, it can be unraveled in a matter of hours and days by armed violence. Investments in preventing and reducing armed violence thus make basic investment sense: it can minimize the risk of catastrophic and long-term development losses. This is a basic equation long recognized by the United Nations in its founding Charter. It is also part of the rationale that gave rise to the Bretton Woods institutions in the first instance.[13]

Yet, in order to set priorities and prioritize interventions, it is critical to develop a credible evidence base of the many ways in which armed violence and development are connected (or not). Specifically, it is useful to better understand the ways in which lower-income countries are predisposed to armed violence (as compared to middle- and upper-income countries) and give weight to UN Secretary General and General Assembly claims.[14] As intuitive as the linkages between armed violence and development may appear, it is important to test our assumptions with robust data and analysis..

The scope and scale of armed violence is typically measured by the number and incidence of people dying per year of intentional violent causes. While mortality is of course only the tip of the iceberg of the magnitude of armed violence, an accounting of lethality remains a valid and reliable proxy of estimating real and relative rates of victimization more generally. Every year, roughly 740,000 people are believed to die directly or indirectly as a result of armed violence in both conflict and non-conflict affected areas.[15] Surprising to some international observers, the majority of these deaths occur in lower- and middle-income settings ostensibly ***not*** at war. A smaller proportion – approximately one third – can be attributed to war-related violence and preventable illnesses in war zones.[16]

Armed violence is a multidimensional and heterogeneous phenomenon. It occurs across multiple settings – from inner city neighborhoods to pastoral hinterlands. The scale of armed violence is also elastic: it manifests from the walled compounds of households to international borders. While committed and experienced predominantly by young males,

armed violence affects men and women, boys and girls in different ways. Though varying from place to place, small arms and light weapons – especially handguns and assault rifles – are used in almost two thirds of all homicidal events around the world.[17]

This report draws on two primary sources of data: the Armed Violence Database (AVD) of the Geneva Declaration Secretariat[18] and the MDG and Human Development Index (HDI) datasets maintained by the United Nations (see annex 2). It is important to stress that these data sources suffer from important limitations. For example, comparative and longitudinal data on armed violence extends only to 2004. Meanwhile, MDG and HDI-related data has been tracked for decades. Even though such issues are common to all statistical work, the data situation allows for only a preliminary assessment and all findings should be treated as such.

Ultimately, until the overall quality and quantity of data improves, any accounting of the relationships between armed violence and development will be hampered by evidentiary gaps. As is well known by agencies such as the United Nations Development Programme (UNDP), the United Nations Office for Drugs and Crime (UNODC) and the World Health Organization (WHO), there are tremendous disparities in the quality of data and statistical capacities within and between countries and their development, crime and public health departments. Data deficiencies are widely discussed in the literature and relate to incomplete and missing data, weak vital registration harvesting infrastructure, and confusing, and potentially competing, categories and codes to measure vital registration and even homicide.[19]

Overall, the report offers a quantitative assessment of the relationships between armed violence and specific MDG and HDI outcomes. The assessment applies rates of direct conflict deaths (DCD) and non-conflict deaths (homicide) as indicators of armed violence, It also examines HDI, MDG progress, and national as development indicators. It also presents original qualitative analysis from Brazil, Burundi, Lebanon and South Africa in order to highlight the differentiated effects of armed violence on development from the national to the city level. Predictably, the report finds that while the relationship between armed violence and MDG progress is not straight-forward, there is convincing statistical evidence that high homicide levels are related with low levels of development and that this appears to be slowing development and progress towards the achievement of the MDGs.

A number of particularly important findings indicate that:

- **The relationships between armed violence and development are complex and require careful definition of key terms and precise statistical analysis.** Even so, the study finds that areas experiencing comparatively high rates of conflict-related and homicidal violence tend to experience declining levels of progress in relation to both human development as measured by poverty, income and the achievement of specific MDG goals.

- **Countries with low homicide rates make more rapid human development gains than countries with higher homicide rates.** Specifically, countries featuring lower average homicide rates had a roughly 11 per cent higher chance of achieving improvement in the HDI than countries registering higher homicide rates.

- **Countries reporting high levels of homicide are statistically associated with reduced progress across specific MDG Goals.** Specifically, high rates of homicidal violence contributes to dramatic reductions in eradicating extreme poverty, youth unemployment and hunger (MDG 1), increased primary enrolment

ratios (MDG2) and reduced infant mortality and adolescent birth rates (MDG 4 and 5);

- **Meanwhile, higher levels of development tend to be associated with reduced levels of homicidal violence.** Specifically, countries reporting proportionately lower levels of income inequality and unemployment feature comparatively lower levels of homicide. By way of contrast, lower levels of human development and income occurs in parallel with high and very high rates of armed violence; and

- **The monitoring of armed violence should be integrated into assessments of MDG progress and achievement**. An armed violence monitoring group could be established featuring an international network of multidisciplinary and multi-sector partnerships. These efforts could strengthen national data gathering capacities and regional armed violence monitoring systems.

The report is divided into four parts. It first presents findings from a statistical analysis of key indicators of armed violence and 20 MDG variables. It then considers the extent to which the findings are supported (or not) in the scientific literature. Section three features four case studies. The first case study reviews the relationships between urban violence and MDG achievement in Brazil; the second considers the various ways in which armed violence constitutes an obstacle to development in Burundi; the third explores the influence of historical patterns of violence in Lebanon's prospects for MDG achievement; and the fourth examines the link between criminal violence, economic inequality, and unemployment in South Africa. The report closes with a brief examination of how monitoring of armed violence could be integrated into a routine assessment of MDG achievement.

## 1. Examining the statistics[20]

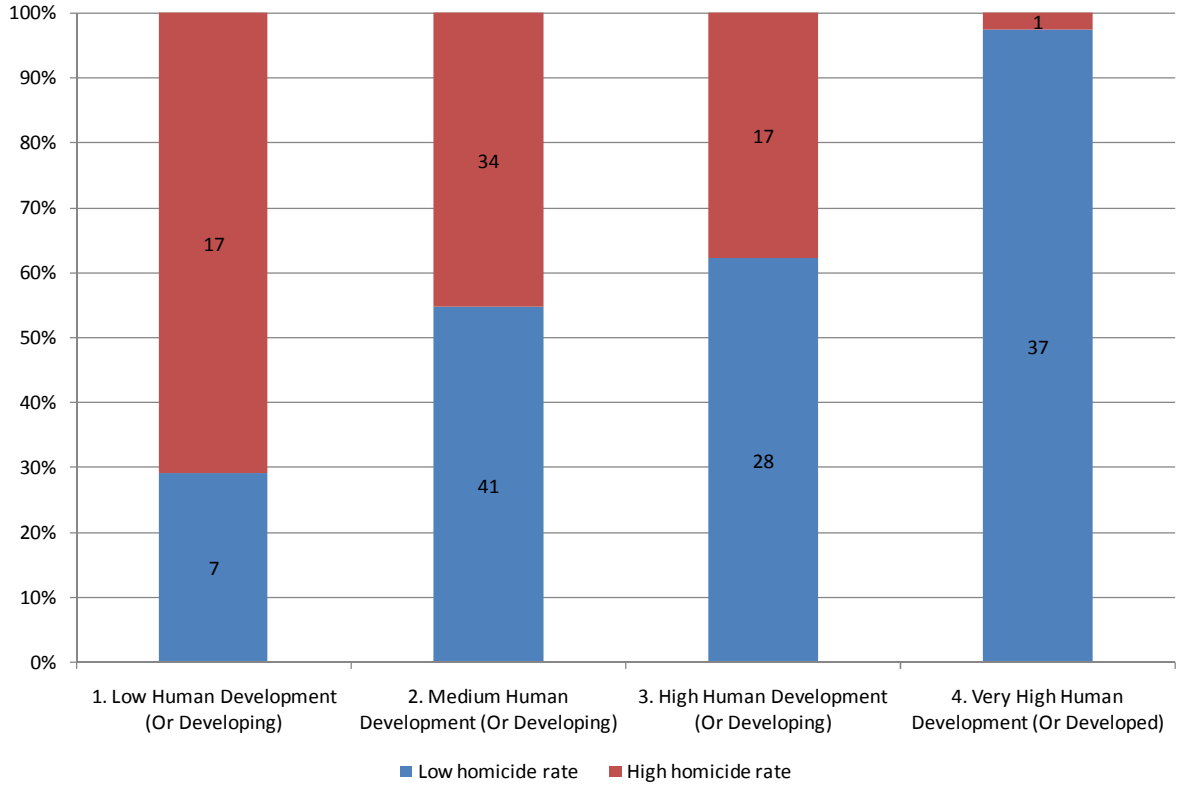
The collection of data on armed violence and development typically suffers from a number of selection biases. As a result data tends to be patchy and trends are spatially and temporally uneven and possibly unrepresentative. Notwithstanding these limitations, it is possible to undertake a tentative statistical assessment of the relationships between homicidal violence and developmental progress. Assessing the relationship between conflict-related violence and various indices of development achievement is somewhat trickier owing to non-comparable and often mixed methods of data collection in countries affected by warfare.[21]

This section first considers the correlates between homicide rates (per 100,000) with country development performance. It measures "development" as a function of UNDP's HDI, the World Bank's Income Level Classifications and selected MDG indicators. Methodologically, this kind of analysis requires pooling of homicide rates (across time and space) and a wide selection of development metrics, including 20 selected MDG indicators during the period 1990-2008, for all countries for which information was available (roughly 134 countries).[22] Annex 2 offers a technical review of the econometric approach adopted as part of this study.

Overall, the study finds that **countries that report lower levels of human development feature, in proportional terms, more violence**.[23] Figure 1 reveals that roughly 70 per cent of countries categorized as experiencing low human development (first bar) and about 50 per cent of countries labeled with medium human development (second bar) register homicide rates above the average global homicide rate of 7.24 per

100,000 population.[24] It also shows that virtually every country registering high human development also experiences low levels of homicidal violence (fourth bar).[25]

**Figure 1. Disaggregating countries according to homicide levels and HDI**



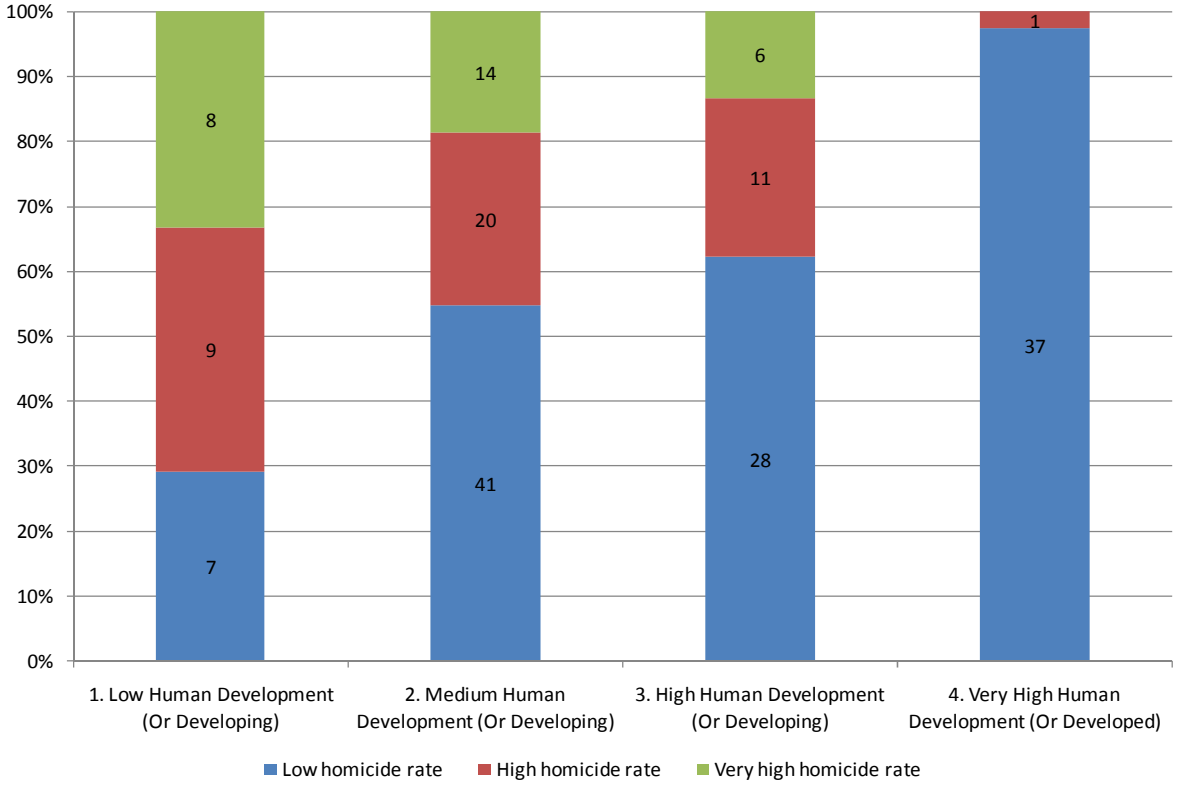

Although **overcoming poverty and improving development performance does not guarantee reduced levels of armed violence, low levels of development are in most cases correlated with violence.** In order to capture temporal variation, these findings were cross-checked against a supplementary analysis that classified countries as either "improving" or "deteriorating" across various indices of development. The assessment found that homicide rates determine negatively and significantly the presence of an improvement of a countriy's HDI rating. Put succinctly, **higher homicide rates drag countries toward lower HDI rankings.**[26]

The statistical assessment demonstrates that **the lower the level a country's human development the higher the intensity of homicidal violence**. When homicidal violence itself is disaggregated into 'high' (above 7.24 per 100,000) and 'very high' (above 18 per 100,000), countries featuring lower human development are disproportionately affected by very high homicidal violence (see Figure 2). More than 30 per cent of all countries reporting low human development report very high homicide rates, a figure that decreases to about 18 and 12 percent in medium and high human development countries respectively. Meanwhile, countries featuring very high human development do not exhibit very high levels of homicidal violence at all. Overall, countries experiencing high and very high violence levels are home to 19 percent of the world's population.[27]

It is possible to **geographically map out the relationship between armed violence and human development** according to countries registering high homicide rates and those affected by armed conflict.[28] Indeed, countries reporting high homicide rates appear to be located predominantly in **Latin America and the Caribbean, Central and**

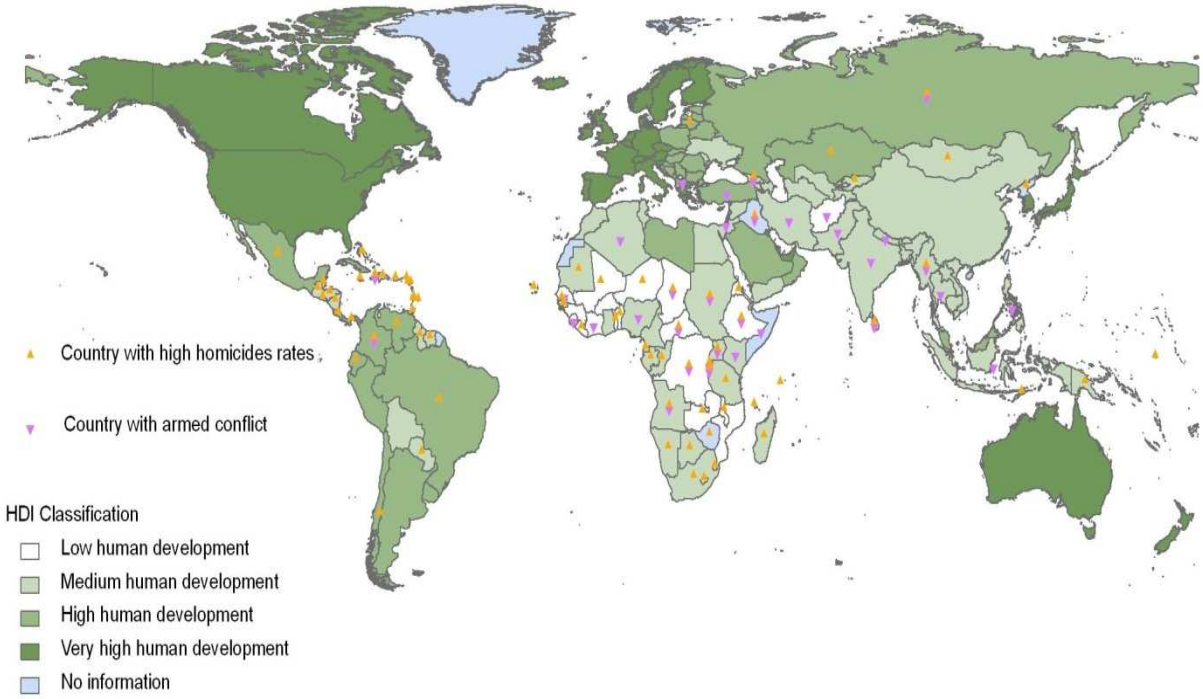
**Southern Africa and particular areas of Asia.** Conflict-affected countries are highly concentrated in **Africa and Asia**, although some other regions are also represented (see Figure 3). Predictably, the vast majority of conflict-affected countries also exhibit high homicide rates.[29]

**Figure 2. Disaggregating high and very high homicide rates and HDI**




Moreover, an analysis at the regional level suggests a statistically significant inverse correlation between higher human development and homicide rates in North America, most of Asia and Western, Eastern and Southeastern Europe. Across these regions high homicide rates correlate with comparatively lower levels of human development, thus suggesting the conclusion that lower development is associated with a higher incidence of homicidal violence. It is important to stress that nearly half of those countries reporting low human development are also experiencing an ongoing armed conflict. **Indeed, the higher the level of human development the less likely the country is affected by an ongoing armed conflict**.

**Figure 3. Mapping homicidal and conflict violence and human development, 2004[30]**

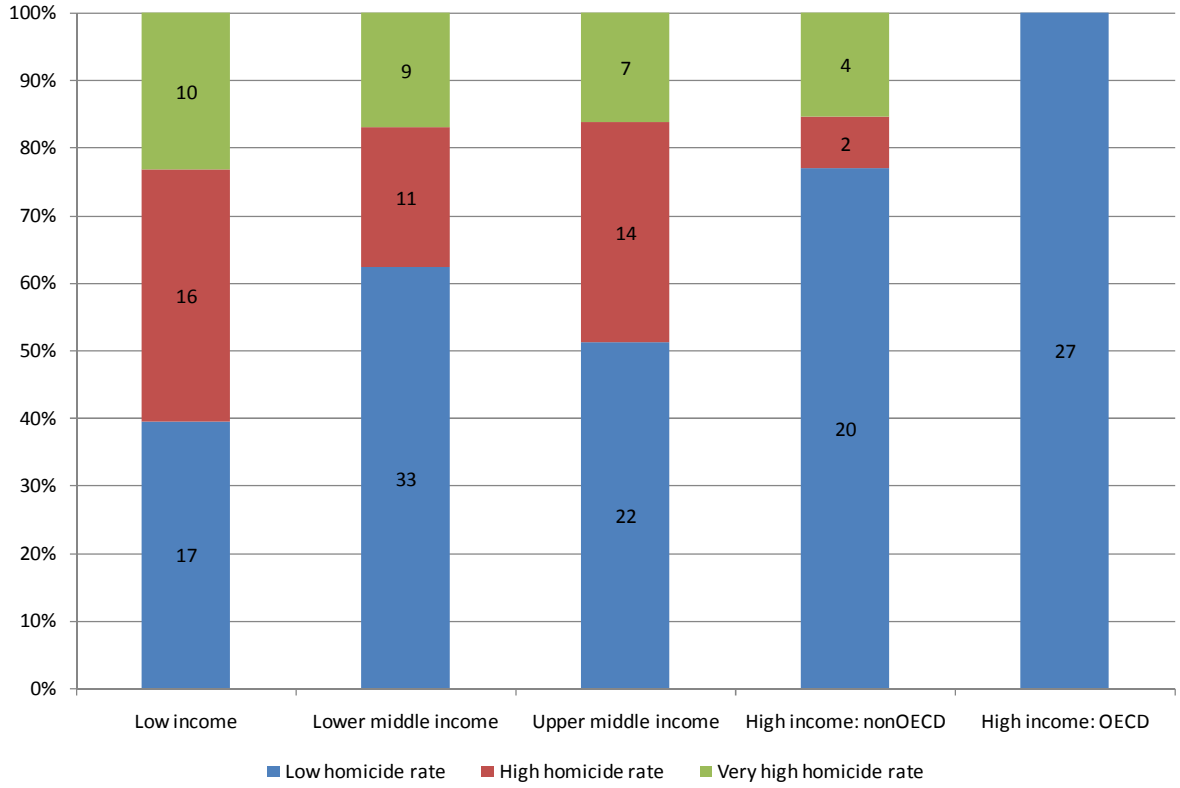



The relationship between armed violence and development holds when shifting the focus from human development to income.[31] The statistical assessment finds that **the lower the income registered by a given country, the higher the reported level of homicidal violence** (Figure 4). Nevertheless, these findings should be treated with a measure of caution. With the exception of high income countries that are members of the Organization for Economic Cooperation and Development (OECD) all of which report low rates of homicidal violence, there are also a small number of countries experiencing very high homicide rates at very high levels of income.

The statistical assessment also considered **the relationship between homicide rates and specific MDG indicators**. The overall finding is that higher rates of homicidal violence are statistically correlated with lower levels of (specific) MDG attainment, including extreme poverty and hunger (MDG 1), universal education (MDG 2), reduction of child mortality (MDG 4) and improvement of maternal health (MDG 5). Annex 1 summarizes these findings. There are also negative statistical associations between homicide prevalence and adolescent birth rate per 1,000 women, the share of the poorest quintile in national income or consumption, children under five mortality rates per 1,000 live births, and enrolment ratios in primary education.

With respect to the MDG 1, the analysis finds that there is a **direct relationship between homicide and poverty levels** (measured in terms of the percentage of the population living under 1 USD (PPP) per day). This confirms that higher poverty levels tend to go hand in hand with higher levels of violence. A similar relationship holds for poverty gap ratio.[32]

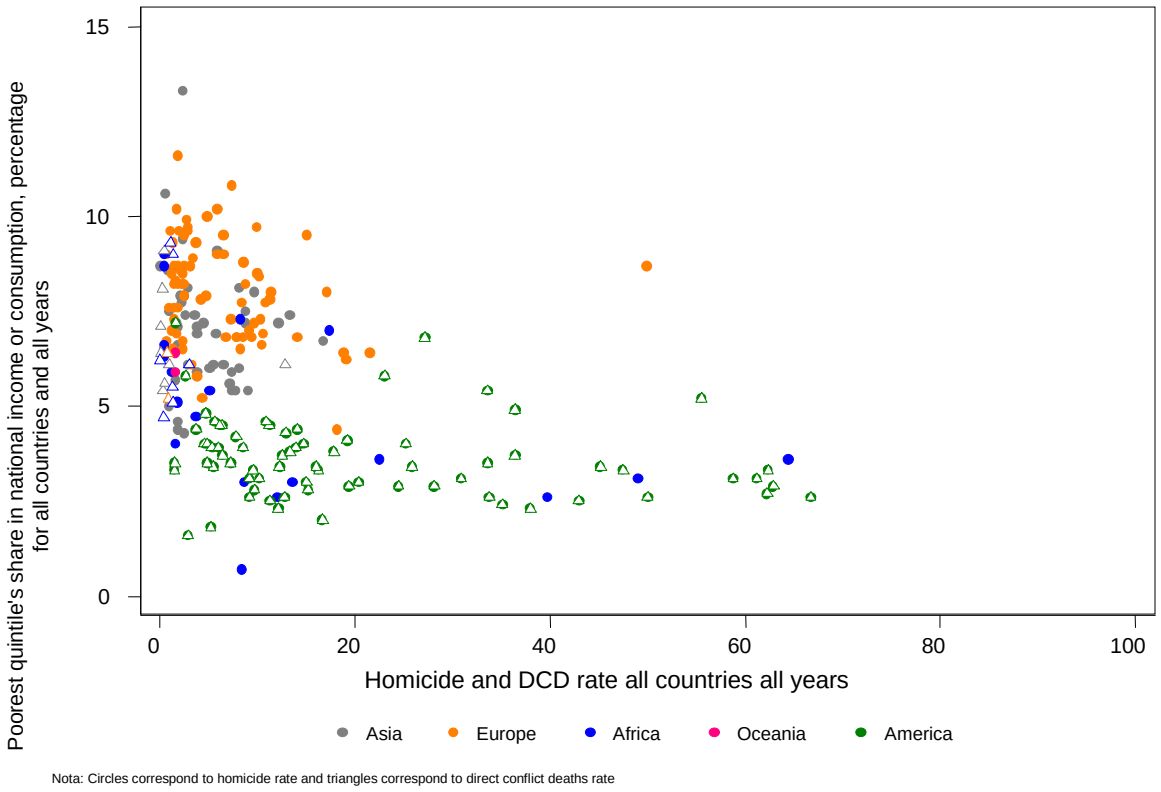
**Figure 4. Country classification by income and homicidal violence[33]**




Likewise, **countries featuring greater income inequality report a higher incidence of armed violence**. Data from 2000 to 2008 indicate that countries where the poor have a disproportionately lower share of total national income exhibit higher homicide rates. Figure 5 below demonstrates this relationship by highlighting where countries stand (per year) in relation to homicide rates and income inequality (represented by the participation of the poorest 20 per cent of the population in national income).[34] The inverse is also true: societies reporting less extreme inequality report much lower levels of homicidal violence.[35]

Also, countries registering low unemployment of young males and females tend to report lower levels of armed violence. **In particular, the lower a country's male unemployment rate the stronger the likelihood of a lower homicide rate.** Although lower levels of unemployment for young males do not guarantee lower homicide rates, there is appears to be a strong relationship between the two variables. When this indicator is disaggregated by gender the correlation between unemployed young females and homicide rates is also high indicating that the correlations are the same for both males and females.

**Figure 5. Percentage share of poorest quintile in income or consumption and armed violence indicators (including DCD and homicide)[36]**




Nota: Circles correspond to homicide rate and triangles correspond to direct conflict deaths rate

It also appears that **armed violence generates a potential impact on the achievement of universal primary education** (MDG 2). A closer inspection suggests that higher homicide levels tend to occur in countries with low enrolment ratios. It is important stress, however, that more statistical analysis is required to disaggregate precisely how such armed violence is correlated with enrolment rates and the extent to which this undermines education performance.

Another significant finding is that **countries registering high teenage birth rates also report higher levels of armed violence**. Adolescent birth rates (birth per 1,000 adolescent females) appear to be strongly correlated with a higher incidence of homicidal violence. Meanwhile, countries featuring low levels of homicide also report low adolescent birth rates. Thus, not only are adolescent birth rates correlated with armed violence, but those countries that are successful in providing a low-violence environment are those that see the largest benefits in improving maternal health (MDG 5).

**Armed violence also appears to be significantly related to infant mortality.** The analysis reveals that low infant mortality occurs in countries reporting low levels of conflict and homicidal violence. After applying a multivariate econometric analysis to control for all measurable factors that may impinge on MDG achievement (in addition to armed violence) it can be confirmed that high child mortality rates are causally linked to the presence and degree of armed violence in a given context.[37]

There also appears to be a significant relationship between armed violence and HIV/AIDS. Specifically, with respect to one indicator for MDG 6 (combating HIV/AIDS), **countries featuring a high percentage of people living with HIV/AIDS (between 15-49 years old) also tend to experience higher homicide rates**. Although based on limited and partial data, there is nevertheless a strong positive correlation. This positive correlation is especially significant in Africa, the Americas and Asia.

In terms of MDG 7 (ensuring environmental sustainability) the analysis suggests that **countries with lower levels of armed violence experience improved access to drinking water and sanitation facilities**. Downwards or upwards changes in the proportion of the population using improved drinking water sources and sanitation facilities are significantly correlated (inversely) with the levels of armed violence in a given country.

It should be noted that a superficial examination of the relationships between direct conflict deaths and MDG progress[38] offers analogous findings to the relationships between homicidal violence and MDG progress. Indeed, higher reported direct conflict deaths are statistically correlated with higher rates of poverty (measured as population below USD 1 and poverty gap ratio); higher share of women in wage employment in the non-agricultural sector; lower enrolment in primary education and ratio of girls to boys in primary education; and last, but not least, lower HDI. All of these findings coincide with those of homicidal violence and probably reinforce these effects in general, and as such are not presented here as separate effects.

**Box 1. A model for testing the impact of armed violence on MDG outcomes**

Although this report detected a significant inverse association between armed violence and specific MDG achievement it is not correct to infer that armed violence "causes" lower development. A challenge to this analysis is the issue of "endogeneity". Put succinctly. armed violence might not be the only factor negatively affecting development even if it is principally observed in low- and middle-income contexts.

The above statistical analysis is complemented by two econometric exercises. The first takes changes in development levels as the dependent variable and explains the extent of change. The second takes a dichotomous variable - either 1 or 0 - as the dependent variable and explains whether there has been a change in development levels.

The latter model addresses the potential endogeneity issues by rescaling the dependent variable. Both models take into account other variables affecting development levels. In this manner, it is possible to econometrically assess the potential impact of armed violence on the progress in development by "controlling" for the impact of armed violence.

The study team selected a range of development indicators according to their potential to demonstrate association and availability. Development indicators included child mortality rates and the Human Development Index.[39] As noted in Section 1, these indicators featured a statistically significant relationship in the correlation analysis. Most other indicators had much lower data coverage or were not indicative of promising results.[40] The analysis was performed for all countries with data available for the period 2000-2007 in order to account for the period during which the MDGs were agreed.

**Testing the relationship between armed violence and development**

The analysis shows that the reduction of **under-five child mortality** (an MDG indicator itself) is reduced by the presence and degree of armed violence (column 2 Table 1). The result is strongest when considering countries that have experienced a conflict. Nevertheless, the statistical assessment shows that conflict-related violence strongly and robustly explains lack of progress in reducing child mortality.[41]

The statistical assessment also demonstrates a negative and significant effect of armed violence on aggregate indices such as the **Human Development Index**. When considering columns (5), and (6) in Table 2 demonstrates how ever after taking into account the competing effect of conflict on variation in HDI, this negative relationship persists. Intriguingly, the size of this negative effect is, across all specifications, quite similar to the positive (and also significant) effect of public education expenditure on gains in HDI.

**Table 1.** Children under five mortality rate

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| **Homicide rate** | 0.214 | 0.257* | 0.0734 | 0.165 | 0.160 | -0.0192 |
| | (0.223) | (0.0987) | (0.682) | (0.409) | (0.419) | (0.902) |
| **Armed Conflict** | | | | 17.75** | 17.85** | 12.76** |
| | | | | (0.0268) | (0.0248) | (0.0257) |
| **Urban population (% of total population)** | -1.054*** | -0.991*** | -0.854*** | -1.037*** | -1.036*** | -0.619*** |
| | (0) | (1.24e-08) | (2.58e-06) | (0) | (0) | (6.90e-10) |
| **landlock** | | 7.250 | 4.664 | | 1.317 | 3.733 |
| | | (0.571) | (0.659) | | (0.784) | (0.302) |
| **Ratio of female to male tertiary enrollment (%)** | -0.0916 | -0.296*** | -0.224** | -0.0771 | -0.0760 | -0.0786 |
| | (0.195) | (4.17e-06) | (0.0125) | (0.245) | (0.250) | (0.127) |
| **Religion fractionalization** | | 32.35 | 12.84 | | | |
| | | (0.128) | (0.593) | | | |
| **Public education expenditure as % of GDP** | | 1.070 | 0.0133 | | | |
| | | (0.574) | (0.995) | | | |
| **GDP, PPP (current international $)** | | | -0 | | | -0** |
| | | | (0.342) | | | (0.0302) |
| **Africa** | | | 40.29** | | | 68.60*** |
| | | | (0.0157) | | | (1.41e-06) |
| **America** | | | 12.78** | | | 16.20*** |
| | | | (0.0487) | | | (1.18e-05) |
| **Asia** | | | 7.947 | | | 19.80*** |
| | | | (0.526) | | | (2.28e-07) |
| **Oceania** | | | 15.00*** | | | 10.96*** |
| | | | (0.00132) | | | (3.74e-07) |
| **Constant** | 103.4*** | 112.2*** | 95.72*** | 98.59*** | 98.25*** | 60.36*** |
| | (0) | (1.88e-07) | (1.01e-05) | (0) | (0) | (2.81e-09) |
| Observations | 197 | 80 | 80 | 197 | 196 | 193 |
| R-squared | 0.424 | 0.626 | 0.697 | 0.451 | 0.453 | 0.704 |

Robust *pvalue* in parentheses
*** p<0.01, ** p<0.05, * p<0.1

**Table 2.** Human Development Index Average Changes

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| **Homicide rate** | -0.000720* | -0.000780*** | -0.000344 | -0.000565 | -0.000560** | -0.000275 |
| | (0.0948) | (0.00989) | (0.418) | (0.253) | (0.0167) | (0.506) |
| **Armed Conflict** | | | | -0.0435* | -0.0325* | -0.0368** |
| | | | | (0.0967) | (0.0638) | (0.0160) |
| **Public education expenditure as % of GDP** | -0.0103** | -0.00723* | -0.00426 | -0.0120** | -0.00595* | -0.00252 |
| | (0.0303) | (0.0914) | (0.366) | (0.0120) | (0.0812) | (0.387) |
| **percapita goverment expenditure on health** | 9.93e-05*** | 5.88e-05*** | 4.14e-05*** | 9.82e-05*** | 6.04e-05*** | 5.15e-05*** |
| | (0) | (2.10e-10) | (1.06e-07) | (0) | (0) | (0) |
| **Ratio of female to male tertiary enrollment (%)** | 0.000543** | 0.000634*** | 0.000464*** | 0.000518** | 0.000494*** | 0.000342*** |
| | (0.0132) | (0.000165) | (0.000238) | (0.0169) | (6.03e-05) | (1.96e-08) |
| **Religion fractionalization** | | -0.0239 | 0.104** | | | |
| | | (0.562) | (0.0285) | | | |
| **Urban population (% of total population)** | | 0.00331*** | 0.00271*** | | 0.00329*** | 0.00257*** |
| | | (6.42e-10) | (1.09e-07) | | (0) | (0) |
| **Oil exports, top 20 countries** | | -0.0242 | -0.0909** | | -0.163** | -0.147*** |
| | | (0.449) | (0.0288) | | (0.0453) | (8.89e-09) |
| **Africa** | | | -0.187*** | | | -0.147*** |
| | | | (1.12e-08) | | | (1.26e-05) |
| **Asia** | | | -0.101*** | | | -0.0223 |
| | | | (0.00288) | | | (0.105) |
| **America** | | | -0.0709*** | | | -0.0266** |
| | | | (0.000204) | | | (0.0100) |
| **Oceania** | | | -0.0159 | | | -0.00840 |
| | | | (0.127) | | | (0.351) |
| **Constant** | 0.720*** | 0.527*** | 0.619*** | 0.736*** | 0.536*** | 0.613*** |
| | (0) | (0) | (0) | (0) | (0) | (0) |
| Observations | 157 | 107 | 107 | 157 | 157 | 157 |
| R-squared | 0.607 | 0.787 | 0.847 | 0.617 | 0.778 | 0.847 |

Robust *pvalue* in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The second model generated more robust results. They stress how **those countries exhibiting a higher homicide rate feature a lower probability of seeing their HDI improving since 2000** (see table 3, first row). On average, belonging to the group of countries with a higher homicide rate lowers the probability of a country experiencing an improvement on the HDI (independent of its size) by approximately 12 per cent. This probability is even lower if the country has experienced an armed conflict in the past decade, falling by approximately 16 per cent.

**Table 3.**
**Changes in Human Development Index (HDI) and homicide rate (average)**

| VARIABLES | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Homicide rate (average observed level during period) | -0.116*** | -0.115*** | -0.119*** | -0.155** |
| | (0.00112) | (0.000977) | (0.00264) | (0.0412) |
| Exports of goods and services (% of GDP) | -0.0229** | -0.0223** | -0.0251*** | 0.0178 |
| | (0.0255) | (0.0470) | (0.00951) | (0.322) |
| Average years of total schooling, 50-54 total | -0.239 | -0.224 | -0.292** | -0.470 |
| | (0.133) | (0.139) | (0.0245) | (0.179) |
| Percapita government expenditure of health | 0.00512* | 0.00532* | 0.00392 | 0.0188* |
| | (0.0854) | (0.0828) | (0.218) | (0.0802) |
| Military expenditure (% GDP) | -0.0490 | | | |
| | (0.840) | | | |
| Constant | 6.709*** | 6.551*** | 7.489*** | 6.482*** |
| | (0.000370) | (1.50e-05) | (8.01e-06) | (0.000247) |
| Observations | 130 | 138 | 108 | 30 |

(1) (2) Countries with and without armed conflict
(3) Counitres wihthout an armed conflict in the past 10 years.
(4) Countries experiencing an armed conflict in the past 10 years.

Robust *p*-value in parentheses
*** p<0.01, ** p<0.05, * p<0.1

## 2. Reviewing the scientific literature[42]

While the above mentioned findings feature new and original analysis, many claims are also supported by the social science research community. The basic claim that high rates of armed violence – whether resulting from war or crime – tend to have negative effects across most MDG indicators is not disputed, and is the subject of other analysis such as the Global Burden of Armed Violence (2008) and the World Bank's World Development Report (forthcoming 2011). What is more, the Organization for Economic Cooperation and Development's (OECD) International Network on Conflict and Fragility (INCAF) acknowledges how 'external and internal risk factors, alongside the continuum of conflict, armed violence and insecurity makes the MDGs more difficult to achieve'.[43] Related, 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'.[44]

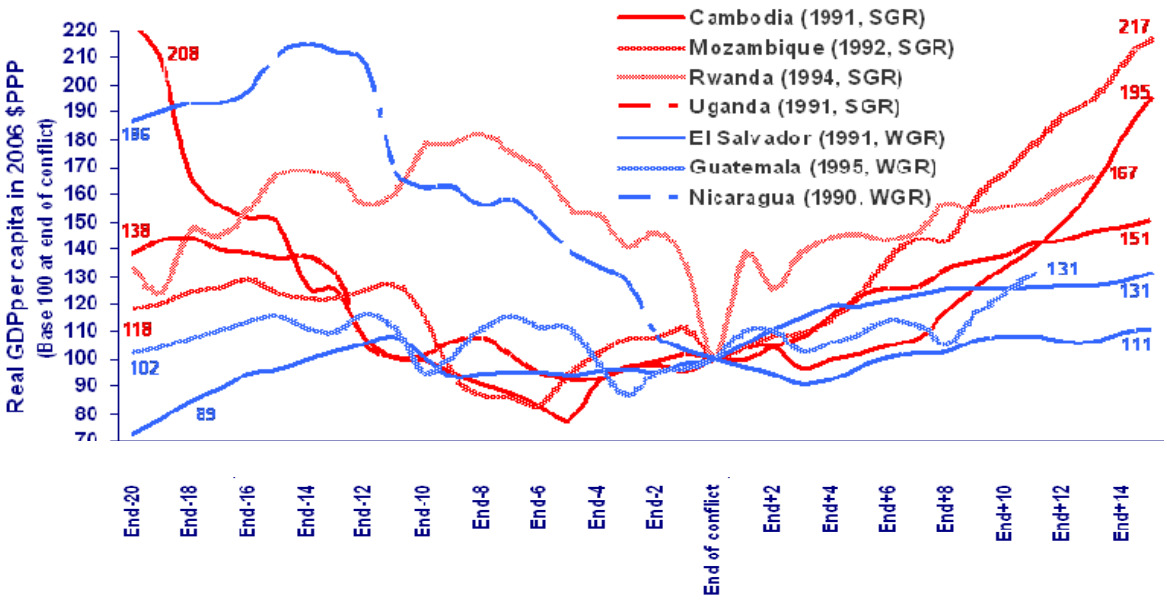
A recent scientific study found that so-called "fragile states" are generally doing worse in terms of MDG progress, even if there is no clear correlation due to the heterogeneity of MDG performance among fragile states.[45] Likewise, initial findings from the MDG Monitor suggest that not one fragile state has achieved a single MDG target. Indeed, just 10 per cent of fragile states are expected to achieve the goal of halving poverty and hunger, while just over 40 per cent of other developing countries have either reached that goal or are expected to reach it. Preliminary research undertaken by the World Bank also suggests that while fragile states and those recovering from fragility account for just over one third of the population of developing countries (excluding India, China and Russia),

they account for well over half of total poverty and more than two thirds of infant deaths and under five deaths in the developing world.[46]

The costs and consequences of armed violence on development more generally are considered to be similarly destructive. For example, the costs of armed conflict are said to vary from USD 60-250 billion per year. This amounts to an average of USD 123 billion across a 27 year period.[47] On the other hand, if the costs of conflict are measured inversely – as the absence of peace – it is possible that the full impacts of armed violence are higher still. For example, by examining forgone investment and lost assets, the Global Peace Index estimates that "more" peace could lead to an additional global net economic gain of USD 4.8 trillion or 9 per cent to the global economy.[48]

Although estimates of the economic costs of armed conflict vary across countries, there is agreement that they can account for a significant share of national GDP. For example, Figure 6 documents GDP trends in just seven countries beset by civil war before, during and after wars came to an end. Each case reveals cumulative GDP losses up until the end of the conflict and register moderate GDP gains in post-conflict years.[49] In some cases, the costs extend well after the war comes to an end. In the case of Guatemala, for example, the violence in the aftermath of the civil war is said to have amounted to USD 2.4 billion or 7.3 percent of GDP in 2005, more than 10 years after the war's end.[50]

**Figure 6. GDP trends before and after the end of conflict in 7 civil war countries[51]**




Note: SGR and WGR stand for "strong" and "weak" growth recovery, respectively.

Meanwhile, the total costs of homicidal violence on development (measured as lost productivity) are as high as USD163 billion per year. Nevertheless, a general economic estimate of the costs of armed violence conceals the many ways that societies, infrastructure and markets are negatively affected. There are of course the visible impacts such as death, injury and damage to assets and property. But there are also indirect effects ranging from the increased recurrent costs of law enforcement and the delivery of justice to the disruption of

essential basic services, economic opportunities and the undermining of governance more generally.[52]

For example, in Brazil and Colombia, the annual direct cost of injuries arising from armed violence are estimated to be USD 88 million and USD 32 million, respectively. When these costs are extrapolated to account for impacts of rising morbidity, foregone earnings, and policing, the burden increases by an order of magnitude. Indeed, the annual costs of gun violence in both countries reached USD 10 billion in Brazil and 4 billion in Colombia, or 0.5 and 1 per cent of their respective GDPs per year.

Most researchers studying the relationships between armed conflict and economic development[53] recognize the many ways in which the former thwarts the latter.[54] A number of social science initiatives have attempted to better understand the specific ways that armed violence undermines development through examining case studies, rather than comparative analysis. For example, the UK Department for International Development supported the Centre for International Cooperation and Security (CICS) to undertake field research in a wide spectrum of countries and cities in order to better understand the manifold ways these relationships are manifest (Figure 7).[55]

**Figure 7. Selected findings on the relationships between armed violence and development (2004-2005)[56]**

| Case | Type of violence | Effects of armed violence |
|---|---|---|
| El Salvador | Violent organized crime and social disorder | Legacy of armed combatants and left-over weapons has contributed to a sharp increase in violent crime and concomitant loss of social capital due to distrust among population |
| Nairobi | Violent organized crime and social disorder | Fear of violence among population, reduced tourism revenues, potential to trigger wider conflict |
| Nepal | Armed conflict | Loss of lives, reduction in access to school, transformation of societal roles – including in relation to gender |
| Nigeria | Armed conflict and organized crime | Extortion gives rise to private security firms and destroys social capital, disruption of economic activity |
| Northeast India | Armed conflict | General climate of fear, capital flight and growing estrangement of youth |
| Northern Kenya | Violent organized crime and social disorder | Decline in pastoral mobility reduces income and armed violence reduces grazing potential of livestock |
| Rio de Janeiro | Violent organized crime and social disorder | Repression and social exclusion of inhabitants of *favelas* and reduced access to basic education |
| Sierra Leone | Armed conflict and post-conflict | Destruction and disruption of governmental infrastructure and services, and industries |
| Sri Lanka | Armed conflict and post-conflict | Increasing crime rates – particularly homicidal violence - due to the availability of small arms and light weapons |
| Southern Sudan | Armed conflict | Exceedingly high rates of mortality, inter-communal clashes, impoverishment of displaced populations, decrease in per capita GDP, |
| Somalia | Armed conflict | Extensive loss of life, clashes between IDPs over resources, militarization of development response |

Overall, the vast majority of evidence generated to support the claim that armed violence contributes to underdevelopment is drawn from case studies. In one example, the case of Mozambique is often presented to demonstrate how conflict-related violence compromised educational services and performance. The civil war during the 1980s and 1990s destroyed an estimated 45 per cent of the primary school network, including physical infrastructure and resulted in the killing, psychological traumatization and displacement of teachers and support staff.[57] Likewise, the case of Cambodian refugees, among others, highlights how approximately two-thirds of asylum seekers suffered severe depression and about one third showed symptoms of post-traumatic stress disorder.[58] These, and other, cases reinforce the way armed violence generates inter-generational and cross-border effects.

But there is also considerable research highlighting the inverse relationship: how underdevelopment contributes to armed violence. For example, Frances Stewart considers the relationships between so-called "horizontal inequality" and armed conflict.[59] Countries that register severe social and economic inequalities typically face a greater probability of tipping into, or facing recurrent armed conflict. These risks are amplified in contexts affected by low levels of economic development and religious polarization. More optimistically, it appears that the risk of conflict onset can be reduced through inclusive and power-sharing governance arrangements. This potentially explains why countries such as Ghana and Bolivia – which feature high horizontal inequalities – are especially effective at preventing armed conflict. Not only do these studies highlight the potential role of "governance" in shaping armed violence, but they provide support to statistical findings that highlight the influence of relative deprivation on the onset of minority rebellions and protests.[60]

Overall, research and debate on income inequality and the onset or severity of armed conflict and criminal violence tend to revolve around whether the former is a *cause*, an *outcome*, or both. Some conflict specialists contend that income inequality is a strong causal factor while others claim that the relationship is insignificant.[61] A large number of studies investigating the linkages between income inequality and violent crime tend to identify a robust causal correlation. For example, comparative and cross-national research has examined positive associations between income inequality and homicide rates.[62] In Brazil, a recent mapping of homicide provided evidence that high homicide rates are correlated with high levels of inequality.[63]

Ultimately, income inequality and lower growth rates appear to contribute to increases in violent crime across most countries.[64] Drawing on panel data for almost 40 states, one study observed a link between increases in economic inequality and low economic growth rates with increases in homicidal violence and robbery.[65] However, these kinds of projections are also occasionally contested by the claim that inequality is not a statistically significant determinant for violent crime. For example, some scholars contend that inequality is not a statistically significant determinant if (a) country-specific effects are not controlled for and (b) the sample is artificially restricted to a small number of countries. [66]

There is also a growing literature highlighting the relationships between unemployment and the incidence and severity of armed violence. According to the theory, private firms are frequently reluctant to invest and to create new jobs due to high crime rates, even though attitudes towards armed violence depend on the different characteristics of firms.[67] The UNODC and the World Bank, together with scholars, highlight how high rates of homicide can in turn hamper GDP growth creating knock-on effects in relation to unemployment.[68] The negative effects of armed conflict on the employment through the

destruction of industries and infrastructure, as well as through the displacement of people, are both intuitive and uncontested.

## 3. Case studies

Comparative statistical surveys of the effects of violence on development are frequently criticized for lacking "context" or failing to adequately explain complex relationships between cause and effect. Qualitative assessments are thus regarded as important to situate the historical, political, social and economic settings in which real or presumed relationships and outcomes interact. In some cases, though not all, case-specific qualitative assessments can usefully illuminate statistical correlations.

In order to complement the statistical assessment presented in section 1, the following section considers four case studies: Brazil, Burundi, Lebanon and South Africa. These cases were selected because they offer four geographically and thematically diverse settings in which to examine the association between armed violence and wider development achievement. At a minimum, they offer contexts of urban criminality, post-war recovery and generalized political instability. While each of the case studies is manifestly different, they nevertheless feature resounding similarities: armed violence has a significant effect on human development.

Specifically:

- **Brazil's** major cities feature heterogeneous rates of urban violence that are well above the national average. Two of the country's cities registering the highest homicide rates (Recife and Maceió) score especially poorly on MDG achievement. This is particularly the case in relation to related to employment and access to water and sanitation.

- Though recently emerging from an intense armed conflict, **Burundi** continues to experience a wide range of obstacles to achieving its MDG goals. This is because the legacy of war and post-war violence on population health, protracted displacement and changes in social attitudes has been profound.

- In **Lebanon** the effects of more than three decades of armed conflict and instability have set-back progress on MDG achievement. This is due in large part to physical destruction, the undermining of foreign direct investment and tourism, the erosion of confidence in the state, and brain-drain through permanent migration. Widows, the disabled, and the unemployed, particularly in Southern and Northern Lebanon, are especially vulnerable.

- More than 15 years after the end of apartheid, **South Africa** continues to feature extremely high levels of homicidal violence. It appears that homicide rates are tightly correlated with high levels of inequality. There is a strong link between youth unemployment, the absence of upward mobility, and the resort to armed violence.

### 3.1 Brazil: urban violence and development[69]

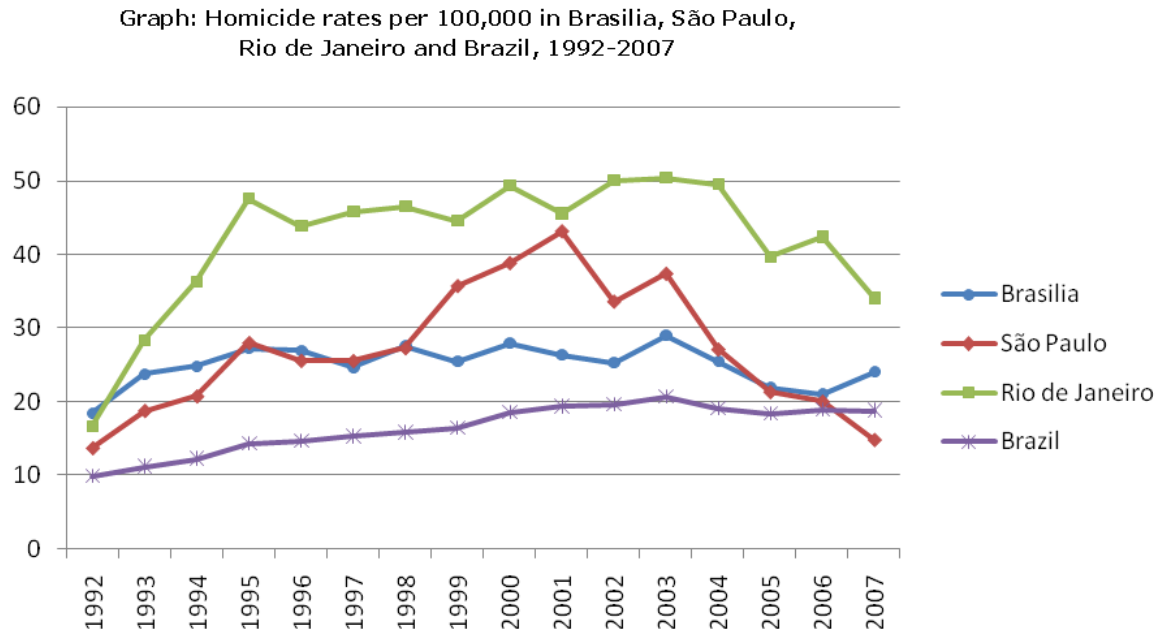
Notwithstanding encouraging efforts to achieve the MDG objectives at the national level, Brazil features considerable sub-national and metropolitan variation in its efforts. Progress in MDGs appears to be strongly associated with relative rates of armed violence at the city level. Specifically, cities with unusually high levels of under-development and homicide

rates – such as Recife and Maceió – are among the country's poorest performers. The case study underlines the urgency for targeted policies aimed at preventing and reducing armed violence and tackling development challenges so that cities do not drag down national improvements.

All told, armed violence in Brazil's sprawling cities has potentially dramatic implications for national achievement of the MDGs. Mirroring wider trends across Latin America, more than 70 per cent of the country's 36,000 annual homicides are committed with firearms.[70] It is well known among security and development practitioners in the country that reductions in violence in a selection of chronically violent cities (and particular slums (or favelas) within those metropolitan areas) could have dramatic implications for overall MDG achievement.

In contrast to many other lower- and middle-income countries, Brazil features exceptionally robust data collection and analysis capabilities at the national and sub-national levels. It is owing to a sophisticated surveillance capacity that it is possible to assess the relationships between urban trends in armed violence and key MDG indicators. In order to highlight general patterns, the focus here is on the large cities of Brazil, including São Paulo, Rio de Janeiro, Porto Alegre, Belo Horizonte, Recife, and Maceió.

**Figure 8. Homicide rates in three Brazilian cities: 1992-2007**




Over the past two decades, Brazil has experienced tremendous economic growth and is currently the eighth largest economy in the world. More recently, Brazilian politicians and public authorities have initiated more concerted action to prevent and reduce armed violence in key areas. For example, a major initiative – the national programme for public citizen security (PRONACI) – launched in 2007 – is believed to have contributed to important dividends in stability and social welfare. Meanwhile, the deployment of pacification police in "hot" areas of key cities has also begun to generate improvements, even if there are indications that violence may be "spilling" into adjoining municipalities. Notwithstanding these and other improvements, armed violence remains a serious and persistent problem across the country.

As in most other parts of the world, armed violence in Brazil is a particularly acute problem amongst young people, especially young black males. As many as one third of all young people claim to suffer the "constant" presence of violence – especially armed violence – in their daily lives. In a national survey, 64 per cent confirmed that they had been exposed to some risk or experience of violence in the past and claim that they "often" see civilians carrying firearms. Moreover, nearly 40 per cent have witnessed situations of police violence. From the youths interviewed, 31 percent also claimed that it was easy for them to obtain firearms.[71]

Although the national homicide rate declined between 1992 and 2007 to approximately 19 per 100,000 (from a high of over 30 per 100,000), it remains almost three times as high as the global average of 7.24 per 100,000. Furthermore, it is also important to recognize that national homicide rates conceal variations in cities and towns. Indeed, a review of sub-national trends highlights how homicide rates in Rio de Janiero and Sao Paolo remain at very high levels despite the progress achieved since 2003 (see Figure 8).

**Figure 9. Armed violence and development indicators of selected cities in Brazil, (2006)**

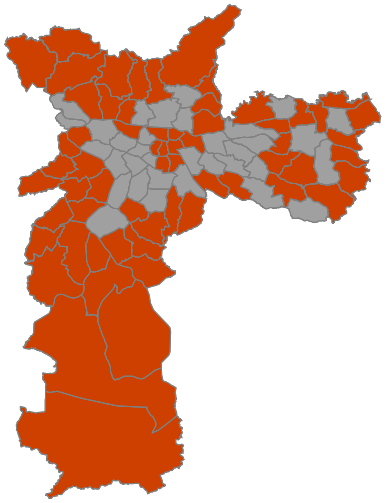
| Variables | Sex | São Paulo | Rio de Janeiro | Porto Alegre | Belo Horizonte | Recife | Maceió |
|---|---|---|---|---|---|---|---|
| Homicide rate (per 100,000) | | 21.4 | 42.0 | 35.5 | 49.0 | 90.7 | 98 |
| Population with ½ minimum wage of income per capita (2006) (in %) | | 17 | 17,4 | 14,2 | 18,5 | 40,8 | 44,7 |
| Appropriation of income by the 20% poorest quintile (in %) | | 3,3 | 3,0 | 2,8 | 3,3 | 2,4 | 2,6 |
| Unemployment of 15-24 year old (in %) | Male | 13,4 | 12,2 | 12,0 | 13,9 | 14,3 | 16,5 |
| | Female | 18,2 | 13,4 | 14,4 | 16,5 | 16,1 | 18,2 |
| 15-24 year old literate people (in %) | Male | 98,6 | 98,3 | 99,2 | 98,8 | 98,2 | 95,2 |
| | Female | 99,2 | 97,8 | 99,6 | 99,1 | 98,3 | 97,7 |
| Population w/out access to water supply (in %) | | 0,3 | 0,2 | 0,8 | 0,1 | 3,9 | 2,8 |
| Population w/out access to sanitation (in %) | | 10,3 | 3,2 | 3,3 | 2,1 | 50,1 | 50,9 |
| Infant mortality rate (in 1,000 live births) | | 12.9 | 13.7 | 12.1 | 12.8 | 14.4 | 18.0 |
| Birth to adolescent mothers (under 20 years) (in %) | | 14.6 | 17.2 | 17.4 | 13.9 | 20.1 | 23.1 |
| Aids mortality rates (per 100,000 population) | | 9.9 | 11.2 | 37.0 | 6.3 | 8.8 | 4.1 |
| Live births with low birth weight (< 2.5 kg) (in %) | | 9.6 | 9.5 | 10.2 | 10.6 | 9.0 | 7.5 |

Variations in homicide and MDG trends vary considerably between the cities of São Paolo, Rio de Janeiro, Porto Alegre, Belo Horizonte, Recife, and Maceió (see Figure 9).[72] Among these cities, Maceió and Recife exhibited the highest homicide rates at 90.7 and 98 per 100,000 respectively: multiple times above the national average and more than 12 times the global average. These rates should be treated as preliminary owing to the likelihood of higher under-reporting in municipalities with weak health registration systems.

Confirming findings set out in the statistical analysis in the earlier section of this paper, the most violent cities (Recife and Maceió) also featured lower levels of overall development. Specifically, they revealed a higher proportion of the population living on less than half the minimum wage, and a higher proportion of the population without access to water and sanitation.

It is also possible to disaggregate trends in armed violence and MDG attainment at the district and municipality level. For example, Sao Paolo, one of the world's largest cities with an estimated 20 million inhabitants, is case in point. The mega-city's 96 districts can be grouped into 34 districts with high homicide rates at roughly 10 per 100,000 (2006-2008) and 62 districts with very high homicide rates of approximately 19 per 100,000 (2006-2008) see Map 2).[73] When considering the distribution of homicide committed with firearms, the groups featured rates of 7 and 12.4 per 100,000 respectively.

**Figure 10. Districts of São Paulo by districts with higher and lower homicide rates**



Group 1: 34 Districts with a homicide rate of around 10 per 100,000

Group 2: 62 Districts with a homicide rate of around 19 per 100,000

Districts exhibiting proportionately higher homicide rates also featured a higher percentage of the population living on less than half the minimum wage. Moreover, residents of poorer slum areas or favelas were also 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 males and comparatively worse indicators of sanitation. It is notable that the unemployment of young females is slightly higher in districts with lower than high homicide rates (Figure 10 and 11).[74]

**Figure 11. Selected development indicators of São Paulo districts with a lower and higher homicide rate[75]**

| Variables | Sex | São Paulo | Districts with lower homicide rates | Districts with higher homicide rates |
|---|---|---|---|---|
| Homicide rate (per 100,000) | | | 10 | 19 |
| Population with ½ minimum wage of income per capita (2006) (in %) | | 20,5 | 11,4 | 24,3 |
| Appropriation of income by the poorest quintile (in %) | | 3,3 | 2,1 | 4,0 |
| 15 year olds occupied in the total of economically active population (in %) | Men | 86,8 | 89,9 | 85,5 |
| | Women | 81,5 | 81,4 | 81,5 |
| Unemployment of 15-24 year old people (in %) | Men | 22,8 | 19,4 | 24,0 |
| | Women | 32,2 | 35,7 | 31,0 |
| 15-24 year old literate people (in %) | Men | 98,9 | 100,0 | 98,5 |
| | Women | 99,0 | 100,0 | 98,7 |
| Households in slums (in %) | | 14,9 | 6,3 | 18,5 |
| Population without access to water supply (in %) | | 0,8 | 0,3 | 1,0 |
| Population without access to sanitation (in %) | | 12,4 | 5,5 | 15,3 |

### 3.2 Burundi: Armed violence as an obstacle to development[76]

After years of armed conflict and considerable international donor investment, Burundi appears to be making important strides toward reducing armed violence and improving its development performance. A number of studies have documented trends and patterns associated with the risks and symptoms of armed violence in the country.[77] While the prevalence and intensity of armed violence appear to have declined in recent years, these and other studies have found that armed violence still claims thousands of victims every year. In 2008, Burundi suffered an estimated 1,049 violent deaths, 1,262 injured, and a homicide with firearm rate of 12.3 per 100,000. About 90 percent of these deaths were civilians.[78]

As in other post-conflict environments, the official end of the war in Burundi has not guaranteed either real or perceived security for the population. While Burundi is not likely to achieve all of the MDG targets by 2015, the country is reporting slow and steady progress on a number fronts. For example, the country registered increased enrolment in primary schools (Goal 2), an increased number of women representatives in parliament (Goal 3), and an increased utilization of landlines, cellular phones, computers and the internet (Goal 8).[79]

Despite these and other positive signs, there are also indications that armed violence has generated a host of negative societal and development impacts in Burundi with implications for MDG progress.[80] Over nearly three decades, Burundi experienced different types of armed violence including mass collective violence, followed by volatile and fast-

changing 'post-conflict' violence that corresponded with a surge in banditry and inter-personal violence. Figure 12 highlights various types of obstacles resulting from armed violence that have generated a continuing impact on Burundian development prospects in the post-conflict period.

**Figure 12. Armed violence as obstacles for development and MDG achievement in Burundi[81]**

| Type of Obstacle | Manifestation of obstacle | How obstacles affect development and MDG achievement in Burundi |
|---|---|---|
| Psychological | • Fear of violence, harm, displacement and the return to armed conflict<br>• Sense of depression, hopelessness, futility, anger, vulnerability and loss<br>• Lack of trust in neighbours and state authorities | • Lower productivity and more despondency and social anomie<br>• Reduced motivation toward fulfilling human capital potential and belief in the possibility of social change<br>• Decreased participation in political process, especially for women<br>• Hesitancy to return after displacement generating reduced agricultural yields |
| Migratory | • Displacement<br>• Large population movement, especially of youth, from rural to urban areas<br>• Rapid population growth due to the return of refugees and IDPs | • Work force is diminished in rural areas, resulting in major impact on smallholding economy<br>• Development resources become stretched by large population increases<br>• Land rights disputes and social tensions between returnees and those that stayed |
| Economic | • Restricted mobility and less access to water, cultivation sites, markets, goods<br>• Destruction and/or theft of personal resources including livestock and crops<br>• Unemployment<br>• Damage to infrastructure<br>• Stunted investment<br>• Interrupted education | • Lower productivity, loss of livelihood resulting in subsistence living<br>• Lack of meaningful economic opportunities<br>• Governmental funds unavailable for development<br>• Lack of basic literacy and educated work force, especially in rural areas<br>• Emergence of illicit enterprises, reducing formal tax base |
| Health | • Poor nutrition and trauma<br>• Exposure to violence at young age<br>• Sexual violence<br>• Increased HIV/AIDS | • Long term biophysical and psychological development effects that lower the ability to learn, and participate productively in society |
| Social and cultural | • Composition and role changes in households and communities<br>• 'Culture of violence' fortified by possession of arms and young males 'coming of age' through violence<br>• Acquiescence to violence as the main form of 'conflict resolution'<br>• Marginalization of women first through widowhood and sexual violence, then through ostracizing traditions<br>• Limited male presence and positive role models in areas hardest hit by violence | • Children and mothers heading households and are unequipped to fill new roles<br>• Decreased community cooperation and effectiveness of social structures<br>• 'Culture of violence' where power structures are difficult to transcend across communities<br>• Many disputes left unresolved due to missing conflict management mechanisms that weaken social capital formation<br>• Sustainable development will require positive participation by both genders |

While exceedingly difficult to measure, the fundamental psychological impacts of armed violence on individuals and on society cannot be overestimated, nor can the resultant impact on development. Positive mental health is intrinsically related to a person's ability to meet basic needs by earning their own income.[82] Twelve years of civil war and a post-war context marked by criminal and political violence have generated widespread trauma with far-reaching and long-standing repercussions on the social tissue of communities.

Anecdotal evidence suggests that the persistence of overwhelming fears of violent attack, harm, reprisal, or displacement can often translate into domestic violence, substance abuse, depression and aggressiveness. Lingering fear has also fostered a decline in trust among neighbours and in the police, military, and government, thus resulting in a real challenge for peacebuilding, but also for domestic investment.[83] The despondency and disbelief registered by survivors directly lowers motivation, as well as the development of local village economies.[84]

The war and its aftermath have generated a host of economic obstacles to development in Burundi. During the war years (1993 and 2005), per capita income declined from approximately USD 149 to USD 83.[85] In 1990, before the civil war, 34.9 per cent of the population was living below the poverty line but by 2002 the figure reached 68 per cent.[86] Violent attacks in the countryside profoundly constrained mobility and restricted access to water sources, cultivation sites, markets and goods and services in rural areas.[87] The threat of armed violence also made it more difficult to access food and water.[88] What is more, violence-related injuries and disabilities placed a further financial burden on already overstretched and impoverished households.

These health risks were exacerbated by the destruction of already dilapidated health and social service infrastructure during the war. As in many countries across Africa, populations that were already required to travel extensive distances to receive medical treatment and assistance faced a double burden of reduced supply of hospitals, clinics and personnel. Even in the rare cases where some form of transportation could be obtained, roads were either inaccessible or considered to be insecure across many parts of the country.[89]

The protracted displacement resulting from more than 12 years of civil war continues to be an obstacle to meaningful developmental progress. At the height of the civil war, 1.3 million Burundians, or 16 per cent of the total population were displaced either internally, to refugee camps in neighbouring countries, or to third countries.[90] These population movements led to a large influx of young men into Bujumbura searching for work and opportunities, and the expansion of the capital city's slums. They also generated a brain drain from rural areas and the country as a whole. Even today, there is a significant deficit of medical personnel and teachers who are willing to live in rural communities. Displacement has also resulted in significant strains on land. Many Burundians depend on subsistence agriculture, and reintegration after war resulted in renewed communal disputes – some armed – that delayed development in many rural parts.

The civil war also facilitated the emergence of various 'cultures of violence'. These are expressed as both symbolic and predatory practices associated with young males 'coming of age' through violence and the acquiescence of communities to violence as the main form of dispute resolution. The process has been accompanied by a progressive erosion of traditional dispute resolution mechanisms at the village level that hitherto fostered a certain level of community cohesion. There are few social structures left that promote dialogue and cohesion over separation and distrust.[91]

Social obstacles for development are particularly acute for women and children. Women were marginalized both as widows and victims of sexual violence, in some cases resulting in ostracization from their families and communities. Single women who were raped face extraordinary challenges in securing a husband; and if a child results from a rape, both child and mother tend to be heavily stigmatized.[92] The civil war also led to an estimated 600,000 orphans in Burundi which continue to represent a major social challenge.[93] The separation between children and their parents disrupts the stability in relationships, and affects the mental health of children with long-term consequences for their emotional and professional development and productivity.

Notwithstanding considerable investment by the international community in Burundi's recovery, armed violence continues to limit aid effectiveness. Attacks on substantive improvements like the destruction of water wells, newly built homes and health clinics, as well as aid workers in the field have resulted in considerable delays (and excess costs) for nationally-driven development programming. Indeed, as seen in many countries plagued by armed conflict, many donors prefer not to invest in infrastructure and facilities if these are likely to be destroyed.

### 3.3 Lebanon: War, Instability, and MDG Achievement[94]

The case of Lebanon demonstrates how recurrent waves of armed conflict and instability constitute a significant impediment to MDG progress. Specifically, the civil war between 1975-1990, enduring political instability, and the 2006 war between Hezbollah and the Israeli armed forces generated far-reaching social and economic costs – the latter being estimated at between USD 80-160 billion.[95] The long term legacy of the civil war has undermined popular confidence in a number of key state institutions, prolonged emigration, and enduring vulnerability of specific societal groups.

Notwithstanding these challenges, Lebanon has achieved several MDG goals. For example, primary school enrollment (for both sexes) and access to improved drinking water and sanitation is almost universal. Moreover, rates of child mortality, child malnutrition, and maternal mortality are at the expected level for a medium-income country such as Lebanon.

Yet a major impediment to improved MDG achievement of Lebanon was the recent war in 2006. Indeed, ground and air operations killed an estimated 1,000 people and injured another 5,800 in Southern Lebanon.[96] Combat activity resulted in the damaging or destruction of approximately 69,000 homes in this area, and some 46 hospitals and 340 schools were damaged.[97] Overall, the costs of the short intense conflict were estimated around USD 5 billion.[98] With GDP growth decreasing from an anticipated 5 per cent to 1 per cent, unemployment soon increased by an additional 3 per cent to an estimated 15 per cent in 2007. The tourism industry – both anticipated visits and infrastructure – was left in ruins. The image of a (mostly) peaceful revolution in 2005 had become replaced with images of all-out war.[99]

What is more, Lebanon's development potential continues to be impeded by the long term legacies of its 15-year civil war. While the war went through various phases of intensity, it reportedly claimed 144,000 victims and 184,000 injured along with tens of thousands displaced.[100] The massive inflation rates of up to 640 percent at their peak led to a complete disappearance of private savings. The middle class was reduced from 68 percent to 29 percent of the total population in relatively short order.[101]

A significant and far reaching legacy is the erosion of confidence in public institutions – particularly in the education and health sectors. Though public schools and hospitals were considered to meet high standards before 1975, faith in these public institutions collapsed.[102] Instead, a myriad of confessional schools and hospitals were established – many of which received public funds from the national budget. Because these service providers are associated with religious groups this reinforces the loyalty of their immediate followers and reduces trust in public service provision.[103] As a result, disproportionate attention is paid to satisfying identity criteria rather than basic needs.

Another important legacy relates to war related-emigration and displacement which has generated both brain drain and remittance flows. An estimated 300,000 people permanently emigrated during the civil war between 1975-1990. About 30 per cent of them acquired tertiary education resulting in a considerable drain on the human capital of the country. At the same time, however, emigration also became a critical channel for income for poor and middle class households. Many would simply be unable to survive without the inflow of remittances. Total remittances were estimated at USD 7.2 billion in 2008.[104] Indeed, the inability of the formal Lebanese labor market to absorb many young people finishing secondary school or graduating from universities led to a steady flow of emigrant workers from Lebanon to the United Arab Emirates and Saudi Arabia. [105]

Another long term legacy of the war is of the structure of vulnerable groups including the disabled and widows (see Figure 13). Indeed, in 2009, 8 per cent of the total population was living under the lower poverty line of 2.4 USD per day and an additional 20 percent were living with less than 4 USD per day. This vulnerability is not geographically homogeneous: inhabitants in northern and southern Lebanon are exposed to a much higher risk of poverty than people residing in Beirut or Nabatieh.[106]

**Figure 13. Vulnerable groups in Lebanon (per cent)[107]**

| Location | Disabled | Female Headed Households | Unemployed | Working Children | Elderly | Fishermen Agricultural Workers |
|---|---|---|---|---|---|---|
| Beirut | 8.9 | 17.4 | 16.7 | 9.2 | 15.8 | 0.3 |
| Mount Lebanon | 38.8 | 41.6 | 48.1 | 31.6 | 39.7 | 15.3 |
| North | 12.2 | 14.6 | 11.3 | 27.5 | 14.1 | 27.3 |
| Bekaa | 15.5 | 8.3 | 7.4 | 12.8 | 14.3 | 29.2 |
| South | 16.0 | 11.6 | 10.1 | 12.6 | 9.5 | 13.2 |
| Nabatieh | 8.6 | 6.4 | 6.3 | 6.3 | 6.7 | 14.6 |

Both civil war legacies and the 2006 war strongly affected other groups including farmers and fishermen. The development of the agricultural sector was neglected already before the outbreak of hostilities in 1975 and civil war added to the relative deprivation of farmers and agricultural labourers. These trends could be counteracted during the war years through the expansion of drug production (mostly Hashish). However, once the war ended, security forces cracked down on drug producers partly due to demands imposed by external donors. The farmers could not adapt to produce (competitive) alternative crops.[108] Making matters worse, agricultural land remains affected by mines, unexploded ordnance, and since the 2006 Israeli-Lebanese war also by cluster munitions.[109] They also led to the non-use of a considerable share of the arable land and diminish Lebanon's agricultural output.[110]

Beyond the legacies of the civil war and more recent rounds of armed conflict, it is Lebanon's political instability that remains a key factor negatively affecting MDG progress. Specifically, when Syria withdrew from Lebanon in 2005, the country was rocked by a series of political assassinations. These were targeted mainly at journalists and politicians who shared a feeling of opposition against the enduring Syrian influence in Lebanon. Following the assassination of former Prime Minister Rafiq Hariri in February 2005 another round of tensions emerged between pro- and anti-Syrian forces.

In 2006 the tensions between the two camps reached a new stage, when supporters of Syria entered the capital and brought public and private life to a virtual standstill. This confrontation lasted some 18-months and turned bloody towards the end. In the midst of the conflict between pro- and anti-Syrian forces, intense violence escalated between Palestinian religious extremists of the Fatah al-Islam and the Lebanese army. It lasted for four months and caused considerable bloodshed. This conflict drew attention to the situation of Palestinian refugees in Lebanon and the risks of official negligence.

Paradoxically, the comparatively high number of small arms and light weapons in circulation does not appear to translate into an increase in violent crime. The post-1990 homicide rate dropped quickly and reached a record low of 0.5 per 100,000 inhabitants in 2006. While under-reporting is likely, the low rates of reported violent crime are associated with social controls at the community level. While the public sector suffered, the war years appear to have strengthened social control, and increased the authority and legitimacy of certain community leaders.[111] Another potential explanatory factor is the relatively successful absorption of 20,000 members of militias into the regular army, police and other security forces. Only few former combatants remained unemployed and were motivated to use the skills they have gained during the war years for criminal activities.[112]

### 3.4 South Africa: Violent crime, economic inequality and unemployment[113]

For more than a decade South Africa has been characterized by high levels of economic inequality and unemployment as well as high levels of violent crime.[114] The following case study explores the interactions between these factors that lower the possibility to achieve the MDGs. Overall, there is supporting evidence to support the relationship between high levels of inequality and correspondingly high levels of homicide. The study also charts a complex picture of the relationship between armed violence and development with a focus on associated incentives, the role of social and labour mobility, and norms associated with masculinity.

Even before the end of apartheid, economic inequality was a tremendous challenge in South Africa. While the poorest 20 per cent of the population earn less than 4 per cent of GDP, the richest 10 per cent earn nearly 45 per cent of GDP. The composition of the wealthiest class has changed over the last decade and now also includes a small layer of wealthy black South Africans; nevertheless, these are the exception and poverty remains very much constructed as a race issue.[115]

Unemployment is another key challenge and has been estimated at between 23.6 and 32.5 per cent.[116] It has been one of the defining issues of post-apartheid South Africa. Youth unemployment is staggeringly high with about half of the labour force aged 15-24 reportedly unemployed in 2005.[117] Many of the young people who are employed are in low wage jobs. About a third of all youth falling below the age of 25 are working in elementary, unskilled occupations, including positions as domestic workers.[118]

South Africa experiences one of the highest murder rates in the world. The latest crime statistics released by the South African Police Service for 2008-2009 put South Africa's murder rate at 37.3 murders per 100 000, at least five times above the global average. Approximately 53 per cent of homicides in the country are committed with firearms that are on the one hand instruments to commit crime, and on the other, frequently described as symbols of social power and dominance.[119] Violent crime is typically characterized by encounters between people who know each other either as friends, relatives or acquaintances. 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.[120]

**Figure 14. Regional comparison of homicide, inequality, poverty and unemployment indicators in South Africa**

| Province | Murder ratio per 100,000 popula-tion (2008)[121] | People living below R283 per month (2008, in %)[122] | Gini co-efficient (1995) [123] | Gini co-efficient (2005) [124] | Unemploy-ment (2008, in %)[125] | Unemploy-ment (2009) |
|---|---|---|---|---|---|---|
| Eastern Cape | 49.5 | 29 | 0.65 | 0.64 | 25.2 | 27.0% |
| Free State | 31.6 | 16 | 0.66 | 0.65 | 22.6 | 25.3% |
| Gauteng | 37.2 | 6 | 0.54 | 0.65 | 20.7 | 25.7% |
| Kwa-Zulu Natal | 47.0 | 33 | 0.63 | 0.67 | 20.8 | 19.2% |
| Limpopo | 14.2 | 24 | 0.63 | 0.58 | 28.9 | 26.9% |
| Mpumalan ga | 25.1 | 38 | 0.58 | 0.67 | 23.1 | 26.6% |
| Northern Cape | 36.5 | 27 | 0.65 | 0.62 | 21.6 | 24.9% |
| North West | 27.4 | 23 | 0.63 | 0.64 | 25.7 | 27.0% |
| Western Cape | 44.6 | 9 | 0.58 | 0.69 | 16,9 | 21.5% |
| South Africa (national) | 37.3 | 22 | 0.64 | 0.69 | 21.9 | 24.3% |

Figure 14 provides a deeper understanding of the potential links between homicide and other development indicators such as inequality, poverty and unemployment, in the different provinces of South Africa. It reveals that there is an association between high levels of inequality and high levels of violence for the metropolitan areas of Gauteng and the Western Cape. When compared, both provinces exhibit a relatively low level of absolute poverty – measured in terms of people living below 283 Rands (about 37 USD in 2010 prices) but experienced a significant increase in inequality over the period 1995-2005. Such a trend would also be supported 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 have declined between 1995 and 2005.

Nevertheless, these types of causal relationships are more ambiguous in other provinces. For example, the role of income inequality is less clear in the provinces of KwaZulu-Natal

and the Eastern Cape which experience both high levels of poverty as well as high levels of murder. Indeed, the Eastern Cape actually experienced a modest reduction in inequality, while KwaZulu-Natal experienced a significant increase in levels of inequality. Likewise, unemployment trends in these two provinces differ, with KwaZulu-Natal recording a relatively low level of unemployment and the Eastern Cape a high level of unemployment.

Youth unemployment can partly be explained by the changing nature of the South African economy over the past 15 years. Between 1995 and 2003 just 1 million formal-sector jobs were created in South Africa, while the labour force grew by about six times that number.[126] The rate at which job opportunities were created was therefore not proportionate to the population entering the job market. Yet the current South African economic model is hinged on designing job opportunities that are both capital and skill intensive. Owing to this anticipated economic trajectory there is a strong link between level of education and access to jobs. This has the unintended consequence of marginalizing a significant proportion of the population who register comparatively lower skill levels.

Not unlike most other contexts affected by chronic armed violence, young men form the bulk of offenders and victims of crime. Crime and particularly violent crime is typically a male youth enterprise.[127] South Africa's government found that homicide, primarily involving firearms, was the leading cause of death among young men between ages 15-21.[128] Youth in South Africa are also twice as likely as adults to be victims of at least one crime. Young males are more at risk of becoming victims of crime and violence with almost one out of two (46 per cent) males reporting victimization, compared to 37 per cent of young females.[129]

A large number of international and national studies have investigated the link between inequality and crime, in particular the link between inequality and violent crime in South Africa. Economists and sociologists have posited a number of theories for the apparent links between economic inequality and crime. Economists hold that the incentives for individuals to commit crime are determined by the differential returns from legitimate and illegitimate pursuits. They tend to focus on the perceived gains from illegal activity as opposed to legal activity in contexts where unemployment is high or wages from work may be low in particular strata of society.[130]

Sociologists focus on the way inequality is associated with lack of social capital and upward mobility. These factors create the context in which higher levels of crime occur and where higher armed violence and increasing inequality translated into a downward development spiral. As such, the lack of upward mobility in a society, combined with a high premium on economic affluence results in a progressive deterioration of societal standards and values. The contradictions between the structural exclusion of a large proportion of population from formal sector employment and the aspirations for economic inclusion and improvement of lifestyle that the advent of democracy inaugurated in South Africa, has led to a tension between a high premium on economic affluence and the lack of real possibilities for upward mobility.[131]

Interviews with offenders jailed for violent crime revealed evidence for this structural contradiction between the exclusion from the formal economy or belief that they would never be incorporated in it. In explaining the motives for their violent actions, these offenders expressed an intense desire to acquire consumer goods, not simply for their material value but as a marker of 'success' and status.[132]

Connections have also been made between masculinity and violence. Crime and violence may constitute a way for young men to reclaim and assert their manhood in an environment where masculinity is widely compromised.[133] In a social setting where men are expected to be socially and physically powerful and provide for their families, high levels of poverty, unemployment and powerlessness experienced by men under both the apartheid and post-apartheid regimes have arguably lead to feelings of emasculation among men, who may become more likely to attempt to reassert their masculinity through crime and violence, thus fostering recurring patterns of cultures of violence.[134]

The violence that characterizes South African society has found its way into South Africa's schooling system. According to one study South Africa's schools are marked by the frequent occurrence of shootings, stabbings, rape and robbery. It found that only 23 pe rcent of students surveyed felt safe at school.[135] While the severity of violence in schools is disputed,[136] it is true that a certain level of violence has become normalized in the schooling system. At the primary school level, 29.5 per cent of reported violence involved a weapon, while at the secondary school a weapon was involved in 54.7 per cent of reported cases of violence.

In most cases, violence involved fights or disputes, which were commonplace. They also often involve gangs who linger around schools to sell drugs. Some reports also note that gangs enter schools in some areas, armed with guns, in order to rob learners. Most reports generally suggest that there is a strong correlation between access to alcohol and drugs and access to weapons within communities. The majority of students in both primary and secondary schools who found it easy to get alcohol and drugs in their community also generally found it easy to get access to a weapon. This generally increases the likelihood of the violence outside the school – in the community – entering into the school.

## 4. Monitoring armed violence and MDG achievement

Accounting for the variegated effects of armed violence on MDG progress and outcomes is an important, yet challenging, objective. Indeed, the 2010 MDG Report calls for added investments in national and municipal monitoring tools and systems to collect and analyze data on a routine basis.[137] Likewise, major UN agencies such as UNDP, UNODC and WHO have repeatedly stressed the central place of data collection and analysis in the elaboration of national development strategies. To be sure, tracking variables and indicators of armed violence in MDG assessments could potentially highlight critical aspects of (under-)performance among low- and middle-income countries in the first decade of MDG implementation.

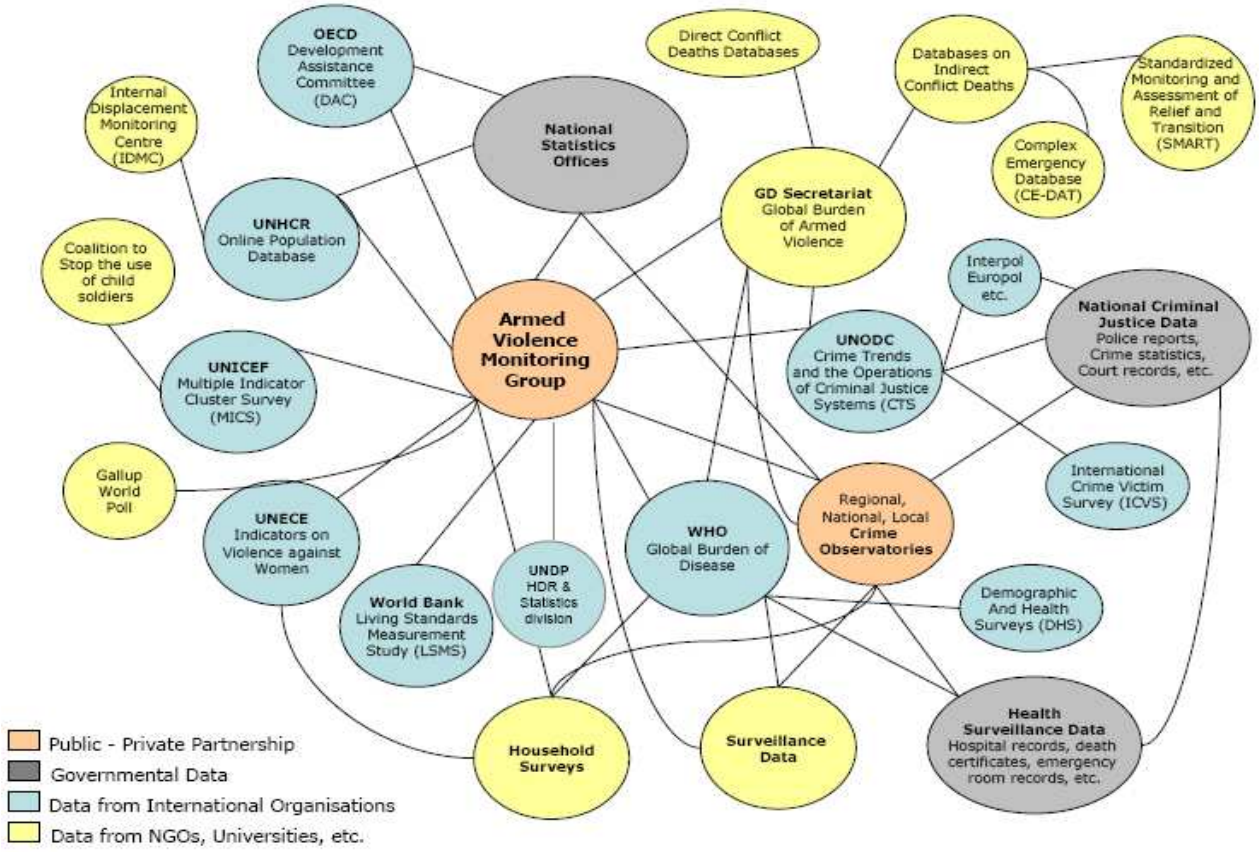
This final section proposes the broad outline of an integrated reporting and monitoring mechanism that could be developed to monitor MDG achievement between 2011-2015, and potentially beyond. It stresses how short and long-term efforts to prevent and reduce armed violence could be enhanced (and strengthened) through investment in metropolitan, national, regional, and international violence observatories and surveillance systems as well as in national systems for collecting and analyzing data on MDG indicators.[138]

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* emphasized the need to standardize the goals, targets, and indicators to monitor and measure armed violence between 2010 and 2015. The Secretary General also stressed

that the MDG review process offers an opportunity to integrate security related themes into the ongoing efforts to achieve the MDGs.[139]The latter Report is silent, however, on the appropriate way to structure a global monitoring system so that it effectively assists countries and cities in need.

At the outset, any monitoring mechanism would need to build on a wide number of existing national and international data-gathering systems. For example, a host of violence monitoring mechanisms – including crime and health observatories – has been established at the regional to the local levels in an effort to better document trends in victimization.[140] Many of these focus on overall national safety concerns while others operate through a network of subnational mechanisms to track secular trends in intentional violence. Taken together, these systems can serve as an invaluable tool for decision-makers, programme managers and field officers that work in the field of crime and violence prevention.[141]

**Figure 15. Visioning an inter-agency armed violence monitoring group[142]**




Harnessing ongoing violence monitoring efforts and generating standardized data will require, at a minimum, the establishment of a global inter-agency armed violence monitoring group (AVMG). States play a primary role through their departments of statistics in monitoring trends in armed violence and development and would need to play a central role in the monitoring group too. But to generate independent data in short order, the group would also involve multidisciplinary and multi-sectoral partnerships bringing together agencies from the multilateral health, crime prevention and development sectors.

In practical terms, the working group would be responsible for tracking the incidence, causes and trends in victimization and development. It would need to set standards and support networks in developing routine data collection. While hardly exhaustive, key experts from international UN and non-UN agencies would play a critical role in gathering and consolidating data. Organizations such as the World Bank, WHO, UNODC, and UNDP are critical in this regard. Meanwhile, competent non-governmental institutions – from research think tanks to academic research centers are also invaluable and would be required to develop a credible data portfolio (see Figure 15).

Any working group would need to be decentralized, multi-nodal and independent. Data harvesting would be directed on the basis of a consolidated list of targets and indicators. Minimum indicators to measure the dependent variable – armed violence – include, inter alia, 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.[143] 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.[144]

In the long-term there is an urgent need to strengthen national data gathering and analysis capacities and the quality and coverage of existing violence monitoring systems. While wide ranging in orientation and capability, violence monitoring mechanisms are recognized as important knowledge-building tool by virtue of their ability to identify health and crime trends and social risk factors that increase one's chance of being harmed by societal changes.[145] At a minimum, they are interdisciplinary, entail a capacity to monitor and assess risk factors, and can be useful in identifying emergent threats in order to inform decision-makers and shape priorities, policies, strategies and programmes.

The conventional model of monitoring and measuring armed violence that relies on autonomous public agencies (e.g. health, police, social services, etc) working independently is fast being overtaken by practical needs on the ground. [146] Efforts to track the relationship between violence and MDG attainment will require an inter-agency and inter-sector approach. It will require data collection activities focused not reservedly on issues of violence and victimization, but in many cases, a focus on trends in primary and secondary education, health, social welfare and other issues.[147]

## 5. Conclusion

This study has highlighted a host of emerging associations and relationships between armed violence – particularly homicides and direct conflict deaths – and specific human development and MDG outcomes. Some of the relationships were statistically stronger than others. While knowledge gaps remain, in most cases owing to data limitations, an irrefutable picture is emerging. There is a strong two-way negative relationship between armed violence and MDG attainment and development more broadly. This 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.

The 2010 MDG review summit and follow-on processes offer important opportunities to elevate the issue of armed violence in conflict and non-conflict settings and explore options to integrate its routine assessment into surveillance of MDG progress. This will take courage on the part of UN members, and a more intensive investment in launching a measuring and monitoring mechanism. UNDP and partners such as the Geneva Declaration Secretariat are prepared to support this process in deepening international

understanding and awareness about the scale and magnitude of the challenge, and evidence-based solutions to prevent and reduce armed violence

**Bibliography**

Abbass, J. (2010) *Obstacles to Development and MDG Attainment in Burundi*. Unpublished Background Paper. Geneva: Small Arms Survey

Aguirre, K., Iglesias, M; Laverde, C.; and Restrepo, J.A. (2010) *Armed Violence and Development: An Exploratory Quantitative Analysis*. Unpublished Background Paper. Geneva: Small Arms Survey.

Alda, E. 2010. Preventing *Crime and Violence in Sub-Saharan Africa: A Silent Emergency.* Washington DC: World Bank.

Altbeker, A. 2005. "Positive Trends: the 2004/2005 Statistics", *South Africa Crime Quarterly* 14: pp. 1-10.

Asiedo, K. (2008) *In Pursuit of the MDGs in Conflict-Affected Countries in Africa: An Uphill Challenge and Policy Lessons*. Paper presented at International Conference and Peace and Security in Africa, Addis Ababa, 20-23 February 2008.

Baigana, F. and Bannon, I. (2004) *Integrating Mental Health and Psychosocial Interventions into World Bank Lending for Conflict-affected Populations: A Tool Kit.* Washington D.C.: World Bank.

Baigana, F., Bannon, I., and Thomas, R. (2005) *Mental Health and Conflicts: Conceptual Framework and Approaches*. Washington D.C.: World Bank.

Barolsky, V. and Wamucii, P. (2010) *South Africa: Income Inequality and Unemployment*. Unpublished Background Paper. Geneva: Small Arms Survey

Basedevant, O. (2009) *How Can Burundi Raise Its Growth Rate? The Impact of Civil Conflicts and State Intervention on Burundi's Growth Performance.* IMF Working Paper 11/2009. Washington D.C.: IMF.

Bhorat, H. and van der Westhuizen, C. (2009) *Economic Growth, Poverty and Inequality in South Africa: The First Decade of Democracy*. Paper Commissioned by the Presidency, Republic of South Africa.

Bhorat, H. and Oosthuizen, M. (2007). Young People and the Labour Market. *Africa Insight* Vol. 37, No. 3, pp. 388-403.

Bourguignon, F. (1999) Crime, Violence, and Inequitable Development. In Pleskovic, B. and Stiglitz, J. , eds. *Annual World Bank Conference on Development Economics.* Washington D.C., World Bank.

Brachet, J., and Wolpe, H. (2005) *Conflict-sensitive Development Assistance: The Case of Burundi.* Social Development Papers, Conflict Prevention and Reconstruction Paper No. 27, Washigton D.C.: World Bank.

Brauer, J. and Marlin, J,T. (2009) *Defining Peace Industries and Calculating the Potential Size of a Peace Gross World Product by Country and by Economic Sector*. Sydney: Institute for Economics and Peace.

Bundervoet, T., Verwimp, P., and Akresh, R. (2008) *Health and Civil War in Rural Burundi*,

MICROCON Research Working Paper 5. Brighton: Institute of Development Studies.

Burton, P. (2006). Snapshot Results of the 2005 National Youth Victimization. *Research Bulletin*, No 1. Cape Town: Centre for Justice and Crime Prevention.

Capobianco, L. (2005) *Sharpening the Lens: Private Sector Involvement in Crime Prevention*. Montreal: International Centre for the Prevention of Crime.

Centre for International Cooperation and Security (CICS) (2005) *The Impact of Armed Violence on Poverty and Development*. Bradford: University of Bradford.

Centre for Justice and Crime Prevention (CJCP)(2008) *Merchants, Skollies and Stones: School Violence in South Africa,* Cape Town: Plumstead.

Centre for the Study of Violence and Reconciliation (CSVR) (2008) *Streets of Sorrow, Streets of Pain: The Circumstances of the Occurrence of Murder in Six Areas with High Murder Rates*. Unpublished Report or the Justice, Crime Prevention and Security Cluster on the violent nature of crime in South Africa. Geneva: Small Arms Survey.

-- (undated) *Adding Injury to Insult. How exclusion and inequality drive South Africa's Problem of Violence.* Johannesburg: Centre for the Study of Violence and Reconciliation.

Collier, P.; Chauvet, L., & Hegre, H. (2008), *The Security Challenge in Conflict-prone Countries*. Copenhagen: Copenhagen Consensus Centre.

Collier, P., Elliott, L., Hegre, H., Hoeffler, A., Reynal-Querol, M. and Sambanis, N. (2003) *Breaking the Conflict Trap: Civil War and Development Policy*, Washington D.C.: World Bank.

Collier, P. and Hoeffler, A. (2004) Murder by Numbers: Socio-Economic Determinants of Homicide and Civil War. *CSAE Working Papers,* 2004-10.

-- (2000) Greed and Grievance in Civil War. *The World Bank Policy Research Working Paper 2355.* Washington D.C.: The World Bank.

-- (1998) On Economic Causes of Civil War. *Oxford Economic Papers* Vol. 50, No. 4, pp. 563-573.

Cliffe, L., Ginifer, J, and Turner, M. (2005) *The Impact of Armed Violence on Poverty and Development: Full Report of the Armed Violence and Poverty Initiative*. Bradford: Centre for International Cooperation and Security, Department of Peace Studies, University of Bradford.

Commission on Human Security (2003) *Human Security Now: Protecting and Empowering People*, New York: Commission on Human Security.

Cramer C. (2003) Does Inequality Cause Conflict, *Journal of International Development*, Vol. 15: 397-412.

De Kock, C. (2007) *Crime Situation in South Africa for the 2006/2007 Financial Year*. Johannisburg: South African Police Service, Crime Information Analysis Centre.

Demombynes, G. and Ozler, B. (2002) *Crime and local inequality in South Africa, Policy*

*Research Working Paper, 2925*. Washington D.C.: World Bank.

Economic Commission for Africa (2005) *Economic Report on Africa 2005. Meeting the Challenges of Unemployment and Poverty in Africa*, Addis Ababa: Economic Commission for Africa.

Fukuda-Parr, S. (2007) *Rethinking the Policy Objectives of Development Aid: From Economic Growth to Conflict Prevention*. Research Paper No. 2007/32. Helsinki: United Nations University World Institute for Development Economics Research.

Fields, C. (2010) *Statistical Report on MDG and Violence Indicators.* Unpublished background Paper. Geneva: Small Arms Survey

Firearm and Injury Centre (2009) *Firearm Injury in the United States*. Philadelphia: University of Pennsylvania.

Gates, S. (2002) *Empirically Assessing the Causes of Civil War*, paper presented at the Annual Convention of the International Studies Association, New Orleans.

Gates, S. and Murshed, S.M. (2005), Spatial-Horizontal Inequality and the Maoist Insurgency in Nepal, *Review of Development Economics*, Vol.9, No.1, pp.121-134.

Geneva Declaration (2010-forthcoming) *A Survey of Violence Monitoring Mechanisms.* Geneva: Geneva Declaration Secretariat.

-- (2010) *Measuring and Monitoring Armed Violence: Goals, Targets and Indicators*, Oslo/New York: Norwegian Ministry of Foreign Affairs/UNDP.

-- (2010, forthcoming). *Armed Violence Monitoring Systems: Linking Evidence to Programming*. Geneva: Geneva Declaration Secretariat.

-- (2009) *Methodological Annex*. Geneva: Geneva Declaration Secretariat. Available at: http://www.genevadeclaration.org/fileadmin/docs/Global-Burden-of-Armed-Violence-Methdological-Annexe.pdf

-- (2008) *Global Burden of Armed Violence*. Geneva: Geneva Declaration Secretariat.

Global Peace Index (2010) *Peace, Wealth and Human Potential*. Sydney: Institute for Economics and Peace.

Goldstone, J. (2002) *Revolutions: Theoretical, Comparative, Historical, and Historical Studies*. Fort Worth: Wadsworth.

Guarcello, L., Lyon, S., Rosati, F.C. (2004) *Burundi: Orphanhood and Child Vulnerability*. Rome: University of Rome.

Gurr, T.R. (1993) *Minorities at Risk: A Global View of Ethnopolitical Conflict*. Washington D.C.: USIP Press.

Gurr, T.T. and Moore W.H. (1997) 'Ethnopolitical Rebellion: A Cross-sectional Analysis of the 1980s with Risk Assessments of the 1990s', *American Journal of Political Science* 41(4): 1079-1103.

Knudsen, A. (2005) *Precarious Peacebuilding: Post-War Lebanon 1990-2005*, Working Paper 2005:12, Bergen: Chr. Michelsen Institute.

Krkoska, L. and Robeck, K. (2006) The Impact of Crime on the Enterprise Sector: Transition versus Nontransition Countries. *Working Paper No. 97.* London, European Bank for Reconstruction and Development.

Labaki, B. and Rjeily, K.A. (1987) *Bilan des Guerres du Liban*. Paris: L'Harmattan.

Lebanon Armed Violence Assessment (LAVA) (2010) *Death and Injury*. Available at http://www.lebanon-violence.org/issues-death-injury.html.

Lederman, D., Loayza, N. and Menendez, A.M. (2002) Violent Crime: Does social Capital Matter? *Economic Development and Cultural Change*, Vol. 50, No. 3, pp. 509-539.

Lorentzen, P., McMillan, J. and Wacziagar, R. (2007) Death and Development, *Journal of Economic Growth,* Vol. 13, pp. 81-124.

Hanemann, U. (2006) *Literacy in Conflict Situations*. Hamburg: UNESCO Institute for Education.

Harttgen, K. and Klasen, S. (2010) *Fragility and MDG Progress: How Useful in the Fragility Concept?* EUI Working Paper 2010/10. San Domenico di Fiesole: European University Institute. http://cadmus.eui.eu/dspace/bitstream/1814/13585/1/RSCAS_2010_20.pdf

Human Rights Watch (2004) *Suffering in Silence: Civilians in Continuing Combat in Bujumbura Rural*. New York: Human Rights Watch.

IANSA, International Action Network on Small Arms, Oxfam International, and Saferworld (2007): *Africa's Missing Billions*, London: IANSA.

International Centre for the Prevention of Crime (ICPC) (2010) Observatory on Urban Safety and Social Risks. Available online at: http://www.crime-prevention-intl.org/publications/pub_90_1.pdf.

International Dialogue on Peacebuilding and Statebuilding (2010) *Dili Declaration: A New Vision for Peacebuilding and Statebuilding*. Paris: OECD.

Jefthas, D., and Artz, L. (2007). Youth Violence. A Gendered Perspective, in P. Burton ed., *Someone Stole my Smile. An Exploration into the Causes of Youth Violence in South Africa*. Cape Town: Centre for Justice and Crime Prevention.

Justino, P. (2006) *On the Links between Violent Conflict and Chronic Poverty: How Much Do We Really Know?* HiCN Working Papers 18. Brighton: Institute of Development Studies.

LaFree, G. (2000) Homicide, Cross-National Comparison of Rates. *Encyclopedia of Criminology and Deviant Behaviour 2*. London: Taylor and Francis.

Leggett, T., Alvazzi del Fratte, A., Pietschmann, T. and S. Kunnen. 2005. *Why Fighting Crime can Assist Development in Africa*. Pretoria: ISS and UN Office on Drugs and Crime

Makdisi, S. and Sadaka, R. (2005) The Lebanese Civil War, 1975-1990, in Collier, P. and Sambanis, N, Eds. *Understanding Civil War*. Washington D.C.: World Bank, pp. 59-85.

Manirakiza, T, Hatungimana, J and Nkezabahizi, F (2007) *Analyse critique de la gestion des conflits fonciers au Burundi*. Bujumbura: United States Agency for International Development.

Mihalache, A. (2008) Gambling on Conflict: ProfilingInvestments in Conflict Countries. Paper presented at the Midwest Political Science Association 66th Convention. Chicago.

Muggah, R. (2005) *Armed Violence in Africa: Reflections on the Costs of Crime and Conflict.* Geneva: Small Arms Survey/UNDP.

Muggah, R. and Berman, E. (2001) *Humanitarianism Under Threat: The Humanitarian Impacts of Small Arms and Light Weapons*. Special Report. Geneva: Small Arms Survey with support from the Inter-Agency Standing Committee.

Nafziger, E. W., Stewart, F. and Varynen, R. (2000) *War, Hunger, and Displacement: The Origin of Humanitarian Emergencies,* Oxford, Oxford University Press.

Neapolitan, J.L. (1999). A Comparative Analysis of Nations with Low and High Levels of Violent Crime. *Journal of Criminal Justice*, Vol. 27, No. 3. pp. 259-274.

Neumayer, E. (2005) Inequality and Violent Crime: Evidence from Data on Robbery and Violent Theft. *Journal of Peace Research*, Vol. 42, No. 1, pp. 101-112.

Norton, A. R. (2000), Lebanon's Malaise, *Survival*, Vol. 42 , No.4, pp. 35-50.

Organization for Economic Cooperation and Development (OECD) (2010) *Accelerating Progress Towards the Millennium Development Goals in Countries Affected by Conflict, Violence and Insecurity*. Document JT03281230, 2 April. Paris: OECD, International Network on Conflict and Fragility (INCAF).

Pelser, E. (2008) *Learning to be Lost: Youth Crime in South Africa*. Discussion Paper on the HSRC Youth Policy Initiative. Pretoria: Reserve Bank.

Pezard, S., and Florquin, N. (2007) *Small Arms in Burundi: Disarming the Civilian Population in Peacetime.* Geneva: Small Arms Survey.

Pézard, S, and de Tessières, S. (2009). *Insecurity is Also a War: An Assessment of Armed Violence in Burundi*. Geneva: Geneva Declaration Secretariat.

Posel, D. (2002) *A Matter of Life and Death: Revisiting 'Modernity' from the Vantage Point of the 'New' South Africa*. Unpublished paper. Wits: Wits Institute for Social and Economic Research.

Presidency of the Republic of South Africa (2009) *Development Indicators 2009.* Pretoria: The Presidency of the Republic of South Africa.

Presidency of Republic of South Africa (2008) *Towards a Fifteen Year Review*. Pretoria: The Presidency of Republic of South Africa.

Prince, J,, Ferland, S., and Bruneau, S, (2009) *Crime Observatories: International Experience Directory*. Montreal: International Centre for the Prevention of Crime.

Rackley, E. (2005) *Burundi: The Impact of Small Arms and Armed Violence on Women.* Brussels: Groupe de recherche et d'information sur la paix et la sécurité.

Raphael, S. and Winter-Ebmer, R. (2001) Identifying the Effect of Unemployment on Crime. *Journal of Law and Economics,* Vol. 44, pp. 159-283.

Richani, N. (2007) Systems of Violence and their Political Economy in Post-Conflict Situations, Washington D.C.: World Bank.

Sambanis, N. (2004) 'Poverty and the Organization of Political Violence', in *Brookings Trade Forum* (2004), pp. 165-221.

Sen, A, (2008) 'Violence, Identity, and Poverty. *Journal of Conflict Resolution*, Vol. 45, No. 1, pp. 5-15.

Sérgio de Lima, R. and Maura Tomesani, A. (2010) *Armed Violence, Urban Spaces and Development in Brazil, Unpublished* Background Paper. Geneva: Small Arms Survey.

Small Arms Survey. (2009). "Testing Received Wisdom: Perceptions of Security in Southern Lebanon", *Small Arms Survey: Shadows of War.* Cambridge: Cambridge University Press.

Stewart, F. (ed.) (2008a) *Horizontal Inequalities and Conflict: Understanding Group Violence in Multiethnic Societies*. Basingstoke: Palgrave Macmillan.

-- (2008b) 'major Findings and Conclusions on the Relationships between Horizontal Inequalities and Conflict', in Steward, F. (ed.) (2008a) *Horizontal Inequalities and Conflict: Understanding Group Violence in Multiethnic Societies*. Basingstoke: Palgrave Macmillan, pp. 285-300.

-- (2003) 'Conflict and the Millennium Development Goals' *Journal of Human Development*. Vol. 4., No. 3, pp. 325-351.

-- (2001), *Horizontal Inequality: A Neglected Dimension of Development*, Working Paper 1, Centre for Research on Inequality, Human Security and Ethnicity. Oxford: University of Oxford.

Stucki, P. (2010a) *Literature review: Armed Violence and MDG achievement*. Unpublished background Paper. Geneva: Small Arms Survey

-- (2010b) *Armed Violence and MDG Achievement in Lebanon.* Unpublished Background Paper. Geneva. Small Arms Survey.

Toole, M. J. and R. J. Waldman (1997) The Public Health Aspects of Complex Emergencies and Refugee Situations, *Annual Review of Public Health* Vol. 18, pp. 283–312.

United Nations (2010a) *The Millennium Development Goals Report 2010*, New York: United Nations.

-- (2010b) *Workshop on Practical Approaches to Preventing Urban Crime*. Background Paper for the Twelfth United Nations Congress on Crime Prevention and Criminal Justice. Document A/CONF.213/14.

-- (2009) *Report of the United Nations Mine Action Co-Ordination Centre*, Beirut: United Nations.

United Nations Development Programme (UNDP) (2010) *The Human Development Concept*, available at http://hdr.undp.org/en/humandev/.

-- (2009) *Towards a Citizen State. Lebanon 2008/2009: The National Human Development Report*, Beirut: UNDP.

-- (2008) El costo economico de la violencia en Guatemala, Guatemala: UNDP.

United Nations General Assembly (UNGA) (2008) *Promoting Development through the Reduction and Prevention of Armed Violence*. Resolution A/RES/63/23. New York: United Nations.

United Nations Office on Drugs and Crime (UNODC) (2010) *International Homicide Statistics: Metadata and Methodological Text for Intention Homicide, Rate per 100,000 Population*. Acailable at http://www.unodc.org/documents/ data-and-analysis/IHS%20methodology.pdf.

-- and World Bank (2007) *Crime, Violence, and Development: Trends, Costs, and Policy Options in the Caribbean*. Washington and Vienna: World Bank and UNODC.

United Nations Secretary General (UNSG) (2009) *Promoting Development through the Reduction and Prevention of Armed Violence*. Document A/64/228, 5 August. New York: United Nations.

Uppsala Conflict Data Program (UCDP) (2009) *Codebook for the UCDP Battle-Deaths Dataset: Version 5.0*. Uppsala: UCDP, available at http://www.pcr.uu.se/publications/UCDP_pub/UCDP%20Battle-related%20deaths%20dataset%20codebook%20v5%202009.pdf.

Uvin, P. (2009) *Life after Violence: a People's Story of Burundi*. London: Zed Books.

-- (2007) *Ex-combatants in Burundi: Why they Joined, Why They Left, How They Fared*. MDRP Working Paper 3.Washington D.C.: World Bank.

Waiselfisz, J.J. (2010) *Mapa da Violência 2010: Anatomia Dos Homicisios No Brasil*. Istituto Sangari: Saõ Paolo.

World Bank (2011-forthcoming) *World Development Report*. Washington D.C.: World Bank.

-- (2009) *The Costs of Violence*. Washington D.C.: World Bank.

-- (2008) *Lebanon. Economic and Social Impact Assessment from Recovery to Sustainable Growth.* Washington D.C.: World Bank.

World Health Organization (WHO) (2008) *Closing the Gap in a Generation: Health Equity though Action on the Social Determinants of Health.* Geneva: WHO.

Zoellick, R. B. (2008) Fragile States: Securing Development. *Survival*, Vol.50, No. 6, pp. 67-84.

**Annex 1. Summary findings for 16 MDG indicators and their relationship to armed violence**

| Goals and targets | Indicators for monitoring MDG progress | Strength of correlation (high, low, none)[148] | Relationship to armed violence |
|---|---|---|---|
| **Goal 1: Eradicate extreme poverty and hunger** | | | |
| Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day | Proportion of population below $1 (PPP) per day (%) | Low | There is a direct relationship between homicide and poverty levels: countries with high homicide levels tend to be countries with higher poverty levels.<br>Progress in development correlates with lower homicide levels, in particular in terms of faster progress in HDI, and reductions in infant mortality and adolescent birth rates, and better water and sanitation facilities coverage. |
| | Poverty gap ratio at $1 a day (PPP) (%) | Low | |
| | Share of poorest quintile in national income or consumption (%) | High | Countries with lower income inequality report a lower incidence of armed violence.<br>Countries improving poorest income participation also see lower armed violence levels. |
| Target 1.B: Achieve full and productive employment and decent work for all, including women and young people | Employment-to-population ratio, both sexes (%) | None | No significant results. |
| | Youth unemployment rate, aged 15-24, both sexes | Low | Countries with low youth unemployment tend to report lower levels of armed violence.<br>Countries improving on this indicator tend to be low armed violence countries. |
| | Youth unemployment rate, aged 15-24, men | Low | |
| | Youth unemployment rate, aged 15-24, women | Medium | |
| Target 1.C: Halve, between | Children under 5 | None | No significant results. |

| | | | |
|---|---|---|---|
| 1990 and 2015, the proportion of people who suffer from hunger | moderately or severely underweight (%) | | |
| | Children under 5 severely underweight (percentage), | None | No significant results |
| **Goal 2: Achieve universal primary education** | | | |
| Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling | Total net enrolment ratio in primary education, both sexes | Low | Higher homicide levels tend to occur in countries with low enrolment ratios. |
| | Literacy rates of 15-24 years old, both sexes (%) | None | No significant results. |
| **Goal 3: Promote gender equality and empower women** | | | |
| Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015 | Share of women in wage employment in the non-agricultural sector | Low | No significant results. |
| **Goal 4: Reduce child mortality** | | | |
| | Children under five mortality rate per 1,000 live births | Medium | Low infant mortality occurs in countries of low violence levels. |
| | Infant mortality rate (0-1 year) per 1,000 live births | Medium | |
| **Goal 5: Improve maternal health** | | | |
| Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio | Births attended by skilled health personnel, percentage | None | No significant results. |
| Target 5.B: Achieve, by 2015, universal access to reproductive health | Adolescent birth rate, per 1,000 women | High | High adolescent birth rates are directly correlated with higher homicide levels. Countries with low levels of homicide, show improvements on adolescent birth rates. Countries with deteriorating levels of adolescent birth rates experience high violence. |

| | | | |
|---|---|---|---|
| **Goal 6: Combat HIV/AIDS, malaria and other diseases** | | | |
| Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS | People living with HIV, 15-49 years old (%) | Medium | Countries with a high percentage of people living with HIV tend to also experience high homicide rates. |
| **Goal 7: Ensure environmental sustainability** | | | |
| Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation | Proportion of the population using improved drinking water sources, total | Medium | Countries with lower levels of armed violence improved access to drinking water and sanitation facilities. |
| | Proportion of the population using improved sanitation facilities, total | Medium | |
| Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers | Slum population as percentage of urban. | None | No significant results |

## Annex 2. Methodology

### Statistical correlation analysis

A correlation coefficient is a descriptive measure of the strength of association between two variables. Values of the correlation coefficient are always between -1 and +1. A value of +1 indicates that the two variables are perfectly related in a positive sense. A value of -1 indicates that the variables are perfectly related in a negative sense. Values of the correlation coefficient close to zero indicate that variables are not linearly related.

The analysis calculated the Pearson correlation coefficient, Spearman and Kendall. The last two have been calculated in order to diminish the leverage effect caused by outliers (extreme values in one or both variables). The Pearson coefficient is parametric and departs from the assumption of a normal distribution of data.[149] The other two coefficients – called Spearman and Kendall[150] – are nonparametric, making them more suitable for the purpose of this research.[151]

One limitation of the correlations is the potential presence of serial dependence (across countries in our case) or even time specific dependence. In order to check for the influence of these factors we check for robustness by considering regions and the exclusion of years in the sample.

Two selected correlation coefficients calculated in this report are presented below. A full list is available in Aguirre et al 2010.

**Correlations between homicide and development indicators**

| Indicator | Pearson's correlation | Spearman's rho | | Kendall´s tau | | n |
|---|---|---|---|---|---|---|
| **1. Adolescent birth rate (per 1.000 women)** | **0.4837** | **0.6564** *(0.0000)* | *** | **0.4651** *(0.0000)* | *** | 966 |
| 2. Births attended by skilled health personnel (percentage), | **-0.0072** | **-0.0105** *(0.8384)* | | **-0.0119** *(0.7286)* | | 378 |
| 3. Children under 5 moderately or severely underweight (percentage), | **-0.1470** | **-0.1109** *(0.1669)* | | **-0.0674** *(0.2110)* | | 23 |
| **4. Children under 5 severely underweight (percentage),** | **-0.1804** | **-0.1626** *(0.0712)* | ** | **-0.0969** *(0.1106)* | | 124 |
| **5. Children under five mortality rate (per 1,000 live births),** | **0.1085** | **0.4341** *(0.0000)* | *** | **0.3120** *(0.0000)* | *** | 415 |
| 6. Employment-to-population ratio, both sexes (percentage), | **0.0068** | **0.0140** *(0.6139)* | | **0.0101** *(0.5839)* | | 1298 |
| **7. Infant mortality rate (0-1 year) (per 1,000 live births),** | **0.1519** | **0.4334** *(0.0000)* | *** | **0.3115** *(0.0000)* | *** | 415 |
| 8. Literacy rates of 15-24 years old, both sexes (percentage), | **0.0241** | **-0.1169** *(0.1255)* | | **-0.0800** *(0.1183)* | | 173 |
| **9. People living with HIV, 15-49 years old, (percentage),** | **0.4200** | **0.3734** *(0.0000)* | *** | **0.2433** *(0.0001)* | *** | 119 |
| **10. Poorest quintile's share in national income or consumption (percentage),** | **-0.4767** | **-0.5214** *(0.0000)* | *** | **-0.3571** *(0.0000)* | *** | 216 |
| **11. Population below $1 (PPP) per day (percentage),** | **0.0634** | **0.2300** *(0.0010)* | *** | **0.1505** *(0.0010)* | *** | 203 |
| **12. Poverty gap ratio at $1 a day (PPP) (percentage),** | **0.0917** | **0.2904** *(0.0000)* | *** | **0.1881** *(0.0000)* | *** | 203 |
| **13. Proportion of the population using improved drinking water sources (total),** | **-0.0957** | **-0.3541** *(0.0000)* | *** | **-0.2366** *(0.0000)* | *** | 263 |
| **14. Proportion of the population using improved sanitation facilities (total),** | **-0.1397** | **-0.3512** *(0.0000)* | *** | **-0.2471** *(0.0000)* | *** | 239 |
| **15. Share of women in wage employment in the non-agricultural sector,** | **0.1142** | **0.1867** *(0.0000)* | *** | **0.1262** *(0.0000)* | *** | 1027 |
| 16. Slum population as percentage of urban (percentage), | **-0.1540** | **-0.1587** *(0.1444)* | | **-0.1053** *(0.1520)* | | 86 |
| **17. Total net enrolment ratio in primary education (both sexes),** | **-0.1186** | **-0.2790** *(0.0000)* | *** | **-0.1910** *(0.0000)* | *** | 675 |
| **18. Youth unemployment rate, aged 15-24 (both sexes),** | **0.1833** | **0.2956** *(0.0000)* | *** | **0.2038** *(0.0000)* | *** | 762 |
| **19. Youth unemployment rate, aged 15-24 (men),** | **0.1283** | **0.2621** *(0.0000)* | *** | **0.1788** *(0.0000)* | *** | 756 |
| **20. Youth unemployment rate, aged 15-24 (women)** | **0.2274** | **0.3357** *(0.0000 )* | *** | **0.2337** *( 0.0000)* | *** | 756 |
| **21. The Human Development Index** | **-0.1949** | **-0.4490** *(0.0000)* | *** | **-0.3142** *(0.0000)* | *** | 485 |
| **22. GNI per capita, PPP (current international $)** | **-0.2731** | **-0.4499** *(0.0000)* | *** | **-0.3150** *(0.0000)* | *** | 1573 |
| **23. Poverty headcount ratio at national poverty line (% of population)** | **0.2997** | **0.2888** *(0.0132)* | *** | **0.2032** *(0.0111)* | *** | 73 |
| **24. Ratio of girls to boys in primary and secondary education (%)** | **0.0605** | **0.1061** *( 0.0023)* | *** | **0.0691** *(0.0030)* | *** | 822 |

Note 1: *p-values* are given in parenthesis
Note 2: ***, ** are significant at 5% and 10%, respectively

**Correlations between homicide rate and changes in development indicators**

| Indicator | Pearson's correlation | Spearman's rho | | Kendall´s tau | | n |
|---|---|---|---|---|---|---|
| **1. Changes in adolescent birth rate (per 1.000 women)** | **0.0526** | **0.2068** *(0.0083)* | *** | **0.1409** *(0.0078)* | *** | 162 |
| 2. Changes in Births attended by skilled health personnel (percentage), | **-0.0190** | **0.0379** *(0.6925)* | | **0.0247** *(0.7004)* | | 111 |
| 3. Changes in Children under 5 moderately or severely underweight (percentage), | **0.0304** | **0.0965** *(0.4103)* | | **0.0645** *(0.4153)* | | 75 |
| 4. Changes in Children under 5 severely underweight (percentage), | **0.1458** | **0.1127** *(0.3870)* | | **0.0699** *(0.4292)* | | 61 |
| **5. Changes in Children under five mortality rate (per 1,000 live births),** | **0.1377** | **0.1266** *(0.0817)* | ** | **0.0832** *(0.0884)* | ** | 190 |
| 6. Changes in Employment-to-population ratio, both sexes (percentage), | **0.0503** | **0.0353** *(0.6460)* | | **0.0267** *(0.6030)* | | 172 |
| 7. Changes in Infant mortality rate (0-1 year) (per 1,000 live births), | **0.1311** | **0.1054** *(0.1478)* | | **0.0757** *(0.1209)* | | 190 |
| 8. Changes in Literacy rates of 15-24 years old, both sexes (percentage), | **0.1181** | **0.1300** *(0.1974)* | | **0.0822** *(0.2099)* | | 100 |
| 9. Changes in People living with HIV, 15-49 years old, (percentage), | **-0.1253** | **-0.1314** *(0.1191)* | | **-0.0808** *(0.1283)* | | 142 |
| 10. Changes in Poorest quintile's share in national income or consumption (percentage), | **0.0355** | **0.1535** *(0.2416)* | | **0.1040** *(0.2427)* | | 60 |
| 11. Changes in Population below $1 (PPP) per day (percentage), | **-0.0038** | **0.0200** *(0.8807)* | | **0.0129** *(0.8885)* | | 59 |
| 12. Changes in Poverty gap ratio at $1 a day (PPP) (percentage), | **0.0282** | **-0.0722** *(0.5869)* | | **-0.0497** *(0.5735)* | | 59 |
| **13. Changes in Proportion of the population using improved drinking water sources (total),** | **0.0653** | **0.2673** *(0.0007)* | *** | **0.1756** *(0.0008)* | *** | 158 |
| **14. Changes in Proportion of the population using improved sanitation facilities (total),** | **0.0826** | **0.2063** *(0.0108)* | *** | **0.1421** *(0.0078)* | *** | 152 |
| 15. Changes in Share of women in wage employment in the non-agricultural sector, | **-0.0252** | **-0.0258** *(0.7776)* | | **-0.0141** *(0.8192)* | | 122 |
| 16. Changes in Slum population as percentage of urban (percentage), | **0.1020** | **0.1096** *(0.3096)* | | **0.0836** *(0.2500)* | | 88 |
| 17. Changes in Total net enrolment ratio in primary education (both sexes), | **0.1229** | **0.1057** *(0.1861)* | | **0.0715** *(0.1818)* | | 158 |
| 18. Changes in Youth unemployment rate, aged 15-24 (both sexes), | **-0.0706** | **-0.0961** *(0.3516)* | | **-0.0651** *(0.3487)* | | 96 |
| 19. Changes in Youth unemployment rate, aged 15-24 (men), | **-0.1139** | **-0.1562** *(0.1307)* | | **-0.1050** *(0.1323)* | | 95 |
| 20. Changes in Youth unemployment rate, aged 15-24 (women) | **-0.0411** | **-0.0667** *(0.5208)* | | **-0.0457** *(0.5139)* | | 95 |
| **21. Changes in The Human Development Index** | **0.0912** | **0.1333** *(0.0729)* | ** | **0.0962** *(0.0526)* | ** | 182 |
| 22. Changes in GNI per capita, PPP (current international $) | **-0.0058** | **0.0881** *(0.2451)* | | **0.0567** *(0.2645)* | | 176 |
| 23. Changes in Poverty headcount ratio at national poverty line (% of population) | **0.5946** | **0.2088** *(0.4936)* | | **0.1026** *(0.6693)* | | 13 |
| 24. Changes in Ratio of girls to boys in primary and secondary education (%) | **0.0437** | **0.0889** *(0.2464)* | | **0.0596** *(0.2425)* | | 172 |

Note 1: *p-values* are given in parenthesis
Note 2: ***, ** are significant at 5% and 10%, respectively

**Econometric analysis**

There are a number of methodologies used to estimate the effects of armed violence on development. In order to review the impact of violence on development variables taking all the variables in levels, the analysis applied a cross-section analysis estimate using pooled ordinary least squares. In order to examine the effect of violence on the probability of improvements in development indicators, a logit model was developed

(a) Pooled cross-section time series model

Multiple regression methods can still be used on data sets that have both cross-sectional and time series dimensions. The pooled is obtained by sampling randomly from a large population at different points in time.

The generic pooled linear regression model estimable by Ordinary Least Squares (OLS) procedure

$$y_{it} = \beta_1 + \sum_{k=2}^{K} \beta_k x_{kit} + \varepsilon_{it}$$

Where i = 1,2,…., N refers to a cross-sectional unit; t = 1,2,…., T refers to a time period and k = 1,2,…., K refers to a specific explanatory variable. Thus, $y_{it}$ and $x_{kit}$ refer respectively to dependent and independent variables for unit *i* and time *t;* $\varepsilon_{it}$ is a random error and $\beta_1$ and $\beta_k$ refer to the intercept and the slope parameters.

(b) Logit Model

The logit model is a specific case of a Binary Outcome Model. For binary outcome data the dependent variable *y* takes one of two values.

$$y = \begin{cases} 1 & with\ probability\ p, \\ 0 & with\ probability\ 1-p \end{cases}$$

The purpose of the model is to find the likelihood that a success of interest happens given the value of a set of determinant variables. In a binary response model, interest lies primarily in the response probability.

$$P(y = 1|x) = P(1|x_1, x_2, \ldots, x_k),$$

Where *x* denotes the full set of explanatory variables.

The logit model does not assume that the response probability is linear in a set of parameters, instead of, the logit model specifies a different functional form for this probability as a function of regressors which is a cumulative distribution function for a standard logistic random variable. The logit model ensures that $0 < p_i < 1$

**Data sources**

Millennium Development Goals

The original database of MDG indicators includes for 151 indicators for the eight MDGs. The information is available for 234 countries with information from 1990 to 2008. The information was downloaded from the website of the Millennium Indicators from the United Nations (2010).

Twenty indicators of the original list were selected considering the availability and the relevance of the information. Find below the list of MDG indicators selected:

1 Adolescent birth rate, per 1,000 women
2 Births attended by skilled health personnel, percentage
3 Children under 5 moderately or severely underweight, percentage
4 Children under 5 severely underweight, percentage
5 Children under five mortality rate per 1,000 live births
6 Employment-to-population ratio, both sexes, percentage
7 Infant mortality rate (0-1 year) per 1,000 live births
8 Literacy rates of 15-24 years old, both sexes, percentage
9 People living with HIV, 15-49 years old, percentage
10 Poorest quintile's share in national income or consumption, percentage
11 Population below $1 (PPP) per day, percentage
12 Poverty gap ratio at $1 a day (PPP), percentage
13 Proportion of the population using improved drinking water sources, total
14 Proportion of the population using improved sanitation facilities, total
15 Share of women in wage employment in the non-agricultural sector
16 Slum population as percentage of urban, percentage
17 Total net enrolment ratio in primary education, both sexes
18 Youth unemployment rate, aged 15-24, both sexes
19 Youth unemployment rate, aged 15-24, men
20 Youth unemployment rate, aged 15-24, women

Alternative development indicators

Four indicators on the level of development of countries were including alternatively to the MDG indicators. Three indicators were taken from the World Development Indicators of the World Bank. The fourth indicator is the Human Development Index.

- The Human Development Index: information for 182 countries for the period 1990-2008.
- GNI per capita, PPP (current international $): information for 178 countries for the period 1960-2008.
- Poverty headcount ratio at national poverty line (% of population): information for 91 countries for the period 1960-2008.
- Ratio of girls to boys in primary and secondary education (%): information for 189 countries for the period 1960-2008.

Additional information for the econometric exercise

The econometric exercise applied a series of explanatory variables as indicators of development. Four indicators were taken from the database of the World Bank, four of the Development Research Institute at the University of New York, one of the Department of Economics and Management of the Pompeu Fabra Univertitat and one of the Statistical Information System of the World Health Organization.

- Public education expenditure as % of GDP. Available for 187 countries.
- Ratio of female to male tertiary enrolment (%). Available for 173 countries
- Average years of total schooling, 50-54, total. Available for 187 countries
- Per capita government expenditure on health. Available for 192 countries.
- Exports of goods and services (% of GDP). Available for 187 countries
- Landlocked. Available for 205 countries.
- GDP, PPP (current international $). Available for 180 countries
- Ethnic fractionalization. Available for 115 countries.
- Religion fractionalization. Available for 138 countries.
- Urban population (% of total population). Available for 207 countries.

Armed violence information

The information of homicide rates from 1986-2006 was provided by the United Nations Office on Drugs and Crime (UNODC). This information is available for 239[152] countries. For 2003-2008 the information was downloaded from website of the UNODC (UNODC, 2010). The information is available for Police and Public health sources.

Information of Direct Conflict Deaths for 35 countries produced for the Global Burden of Armed Violence Project in 2008 (Geneva Declaration Secretariat 2008). To see methodological details, please refer to Geneva Declaration Secretariat (2009).

**Coverage of graphic and statistical analysis**

As the availability of information between these databases is heterogeneous, the availability of country-year pairs is significantly reduced. Figure 15 presents a general classification of availability, defined as high, medium and low information. The availability at the level of regions is shown in figure 16, which include the availability of data in pairs (MDG indicator and the murder rate for each year-country combination). In figure 17 are the data in terms of proportions, allowing you to see which regions are more units to the total indicator data.

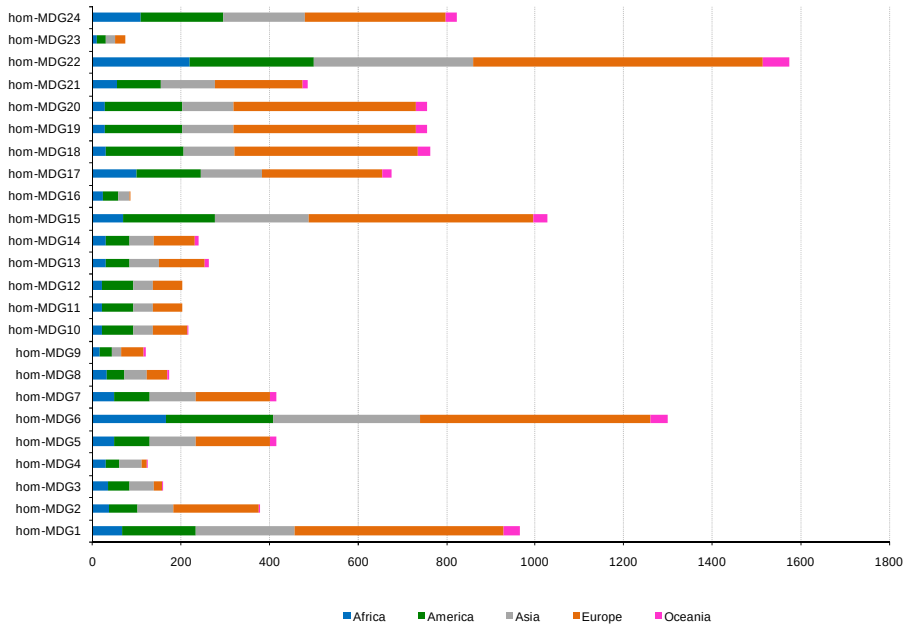
Figure 16 shows the indicators with the greatest availability of information are the GNI per capita (data for 173 countries), the employment-to-population ratio, adolescent birth rate and the share of women in wage employment in the non-agricultural sector. In contrast poverty headcount ratio indicator at national poverty line (% of population) has information for just 52 countries. By averaging the number of countries by indicator, the analysis of this document are made with information from 135 countries.

Figure 17 shows that the regions for more data in total are Europe and America, leaving very little involvement with Africa, Asia and Oceania.

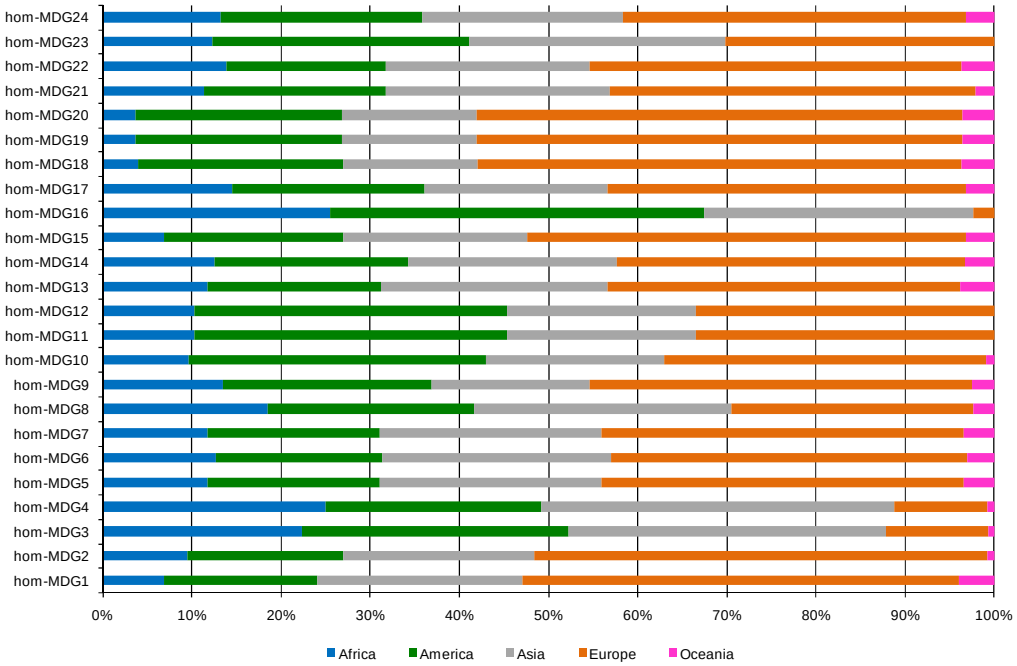
**Figure 16. Development indicator availability**

| Indicators | Availability |
|---|---|
| 1. Adolescent birth rate, per 1,000 women | High |
| 2. Births attended by skilled health personnel, percentage | Medium |
| 3. Children under 5 moderately or severely underweight, percentage | Low |
| 4. Children under 5 severely underweight, percentage | Low |
| 5. Children under five mortality rate per 1,000 live births | Medium |
| 6. Employment-to-population ratio, both sexes, percentage | High |
| 7. Infant mortality rate (0-1 year) per 1,000 live births | Medium |
| 8. Literacy rates of 15-24 years old, both sexes, percentage | Low |
| 9. People living with HIV, 15-49 years old, percentage | Low |
| 10. Poorest quintile's share in national income or consumption, percentage | Low |
| 11. Population below $1 (PPP) per day, percentage | Low |
| 12. Poverty gap ratio at $1 a day (PPP), percentage | Low |
| 13. Proportion of the population using improved drinking water sources, total | Low |
| 14. Proportion of the population using improved sanitation facilities, total | Low |
| 15. Share of women in wage employment in the non-agricultural sector | High |
| 16. Slum population as percentage of urban, percentage | Low |
| 17. Total net enrolment ratio in primary education, both sexes | Medium |
| 18. Youth unemployment rate, aged 15-24, both sexes | Medium |
| 19. Youth unemployment rate, aged 15-24, men | Medium |
| 20. Youth unemployment rate, aged 15-24, women | Medium |
| 21. HDI | Medium |
| 22. GNI per capita, PPP (current international $) | High |
| 23. Poverty headcount ratio at national poverty line (% of population) | Low |
| 24. Ratio of girls to boys in primary and secondary education (%) | Medium |

**Figure 17. Availability by region, absolute values (MDG indicator and the murder rate for each year-country combination)**



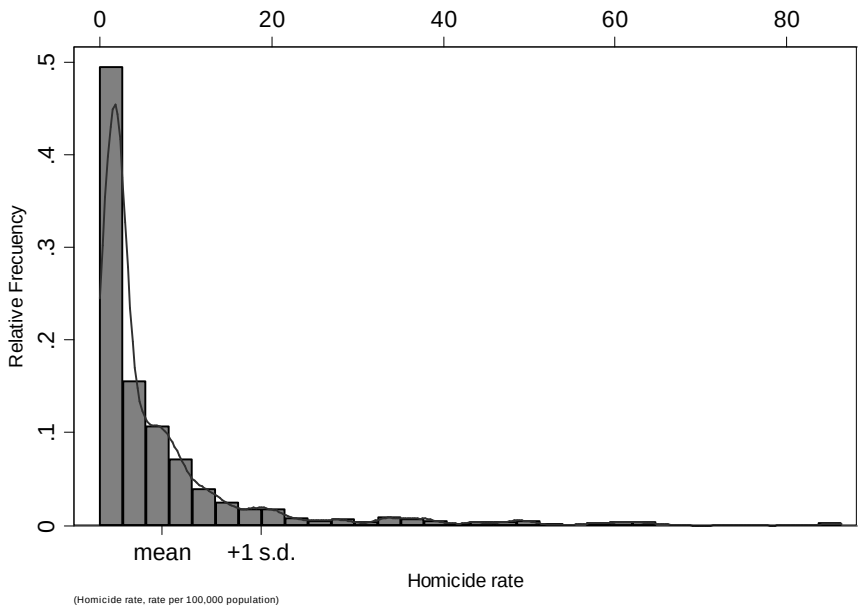

**Fugure 18. Availability by region. Percentages of total countries in region**




## Homicide rate data distribution

Figure 19 shows the distribution of homicide data used to define the ranges of low, medium and high level of homicides.

**Figure 19. Homicide rate histogram**




**Case studies**

The selection of the case studies sought to account for a geographical scope and diversity and armed violence and development contexts. Brazil examines the phenomenon of urban violence in a fast-growing economy and also seeks to illustrate the challenges of sub-national MDG accounting. Burundi takes stock of the obstacles impeding MDG achievement due to the country's civil war and its experience of post-conflict violence. Lebanon explores some of the short and long-term consequences of armed conflict and political instability on MDG progress. Finally, South Africa represents yet another emerging economy and focuses on how inequality, unemployment, and criminal armed violence interact at the sub-national level. Overall, the case studies aim to illustrate the many relationships between armed violence and MDG achievement. They are not designed to compare case studies according to strict methodology, but rather probe specific thematic issues in depth.

**Figure 20: Overview of case studies**

| | UN region | Development context | MDG context | Armed Violence context |
|---|---|---|---|---|
| Brazil | South America | Emerging Economy | Sub-national MDG accounting | Urban violence |
| Burundi | Africa | Low income | Obstacles to MDG progress | Conflict and post-conflict violence |
| Lebanon | Asia | Middle income | MDG progress | Armed conflict and political instability |
| South Africa | Africa | Emerging economy | Inequality and Unemployment | Criminal violence |

**Endnotes**

[1] Geneva Declaration Secretariat (2008, p. 2).
[2] The definition of armed violence that is used for the data collection from the various sources in this report does not distinguish between legitimate and illegitimate uses of force. It also presumes that there can be legitimate resort to violence in some circumstances in accordance with relevant international and national law.
[3] For an overview of various databases capturing armed conflict data see Geneva Declaration Secretariat (2009, p. 1-9). Some datasets only include conflicts in which government forces are a party to the conflict (UCDP (2009, p. 4)); the composite dataset used in this analysis captures a broader range of violent conflicts.
[4] Battle-related deaths are those deaths caused by the warring parties that can be directly related to combat or actions over the contested incompatibility. UCDP (2009, p. 5)
[5] For a discussion of *indirect* conflict deaths and measurement difficulties associated with them, see Geneva Declaration Secretariat (2008, p. 31-48).
[6] The term 'intentional homicide' captures a wide range of acts that end in a killing, including domestic disputes, interpersonal violence, violent conflicts over land resources, inter-gang violence, predatory violence and unlawful killings by armed groups or armed forces. UNODC (2010, p. 1-2).
[7] Intentional homicide is commonly referred to as 'murder'; unintentional homicide is also called 'manslaughter'.
[8] There are, however, differences between countries and institutions of what counts as a homicide, such as for instance the definition of 'homicide' of the World Health Organization that does not differentiate between 'intentional' and 'unintentional' homicide.
[9] UNDP (2010).
[10] See http://www.mdgmonitor.org/.
[11] OECD (2010, p. 4).
[12] Commission on Human Security (2003), Sen (2008).
[13] World Bank (2010) World DEvelopemnt Report 2011 – Conflict, Security and Development. Preliminary Findings. Unpublished.
[14] See UNGA (2008), UNSG (2009), and Geneva Declaration Secretariat (2008).
[15] Estimate based on figures for 2004. Geneva Declaration Secretariat (2008, p. 2).
[16] Ibid.
[17] Ibid. p. 5.
[18] The Geneva Declaration Armed Violence Database captures data from direct conflict death and homicide from all countries for which data is available.
[19] See, for example, Alda (2010), Leggett et al 2005, Muggah 2005, Atbeker 200, Lafree 2000).
[20] Based on Aguirre et al. (2010) and Fields (2010). Aguirre et al. (2010) provides an exhaustive listing of all findings. The present report only accounts for significant findings. The statistical analysis is based on a selection of 21 MDG indicators that took into consideration their potential relevance for armed violence. Most statistical studies are based on bi-variate correlations that measure the degree of association between the development variables and homicidal violence. This report, however, also examines the dynamic relationships between direct conflict deaths and development achievement. We also report on these findings and the difference with other results when significant. All correlations reported were checked for robustness, the exclusion of outliers and extreme value observations, regional variations and independence of observations. We also report the results of a regression analysis that isolated the most significant findings from correlating factors in a multivariate setting. Although correlation analysis has the shortcoming of not offering a causal explanation, it does measure the direction and strength of the relationship between two variables. Regression causal analysis is limited by data availability and the lack of variation given the short period of time for the

analysis.
[21] The report does not consider explicitly the direction of causation between conflict deaths and MDG indicators, though this may be examined in future assessments by the Geneva Declaration Secretariat and the Small Arms Survey.
[22] The development indicator that registered the highest number of data points was the level of Gross National Income (GNI) per capita with 173 countries with information and 1573 yearly data points. In comparison, the ratio of girls to boys in primary education provided information for 52 countries and 822 data points.
[23] The classification of countries according to HDI is available in http://hdr.undp.org/en/media/HDI_trends_components _2009_rev.xls.
[24] Figure 1 shows in total 24 low, 75 medium, 45 high, and 38 very high human development counties for which data is available. It shows the proportion within each category of countries that experience homicide rates that are above (red) or below (blue) the global average (7.24 per 100,000) and the number of countries falling in each category inside each bar.
[25] An exception in this regard is Barbados.
[26] This was the result of a regression logit analysis in which the dependent or left hand side (LHS) variable is a dichotomous variable, taking the value of one when a country shows an improvement in the indicator during the 2000-2007 period. In this way, we capture the size and statistical importance of potential factors affecting HDI change likelihood. The model parameters were estimated using maximum likelihood procedures. Robust heteroscedasticity corrected errors are used. See Aguirre et al. (2010).
[27] Overall there are 28 countries with very high homicide levels and 41 countries with high homicide levels. Countries with very high homicide levels include Anguilla, Angola, Bahamas, Brazil, Belize, Burundi, Central African Republic, Chad, Colombia, Congo, Democratic Republic Congo, Democratic People's Republic of Korea, Dominican Republic, El Salvador, Equatorial Guinea, Ethiopia, Guatemala, Guyana, Haiti, Honduras, Jamaica, Lesotho, Niger, Puerto Rico, Rwanda, Saint Kitts and Nevis, South Africa, Sudan, Trinidad and Tobago, Venezuela and Zambia. Countries with high homicide levels include Antigua and Barbuda, Botswana, Myanmar, Cape Verde, Iraq, Chile, Comoros, Costa Rica, Benin, Ecuador, Eritrea, Gabon, Georgia, Gambia, Kazakhstan, Kyrgyzstan, Liberia, Lithuania, Madagascar, Malawi, Mali, Mauritania, Mexico, Mongolia, Namibia, Nauru, Nicaragua, Panama, Papua New Guinea, Paraguay, Guinea-Bissau, Timor-Leste, Russian Federation, Saint Lucia, Saint Vincent and the Grenadines, Seychelles, Sri Lanka, Suriname, Swaziland, Togo, Uganda, Tanzania and Zimbabwe.
[28] Homicide data is for 2004 only, the latest for which comprehensive data is available.
[29] Of the countries with armed conflict, more than 80 percent feature high or very high homicide rates (29 percent very high) (Aguirre et al. 2010).
[30] The map reflects data for 2004. Violence data are based on UNODC sources and the Geneva Declaration Secretariat Direct Conflict Death and Homicide database.
[31] The classification of countries by income group is from the World Bank. See http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20420458~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html
[32] The relationship between poverty and homicide levels is confirmed also by an alternative indicator. When correlating the poverty headcount ratio at national poverty line (% population) there is a positive significant correlation with homicide levels (Aguirre et al., 2010, pp. 17-18).
[33] Figure 4 depicts a total of 192 countries according to different income levels. The blue part of the first bar represents the proportion of countries with low homicide rate (with the number of countries inside the bar, red is a high homicide rate, green a very high homicide rate). For cut off points for homicide rates see the glossary.
[34] Fields (2010) detects a significant negative relationship between an increase in

homicide rates and the 'poorest quintile's share in national income or consumption percentage'.
[35] This finding is based on a strong and significant correlation. The analysis measured inequality by the share in total national income of those that make up the 20 percent of the population with the lowest income levels.
[36] The negative correlation between the two variables is evident by visual inspection and is confirmed by statistical tests.
[37] Aguirre et al. (2010, p. 36).
[38] Based on data for 35 conflict-affected countries during the period 2004-2007.
[39] Data availability (geographically and temporally) limits the possibility for more robust experimentation with respect to model selection and estimation. A larger panel would allow for a panel data model technique. s.
[40] Column 3 in Table 2 shows the existence or not of a significant relationship between armed violence levels and MDGs indicators.
[41] The effect of homicide levels on child mortality reductions does not appear robust when geographical considerations are included as continent dummy variables, but the mentioned conflict effect is robust to the inclusion of regional dummies. Although this model can be criticized in terms of endogeneity, the research team did not find efficient instruments to estimate a two-stages least squares model. Across all cases, the reverse direction of causation would seem implausible.
[42] Based on Stucki (2010a).
[43] OECD (2010, p. 4).
[44] The Dili Declaration represents a consensus between various government and civil society representatives from both developing and developed countries and was the outcome of a meeting held in Dili, Timor-Leste (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 statebuilding, and outlines concrete commitments for governments and international assistance to improve support in these processes. See International Dialogue on Peacebuilding and Statebuilding (2010, p. 1).
[45] Harttgen and Klasen (2010, p. 29).
[46] See World Bank (2011-forthcoming).
[47] Collier et al. (2008, p. 22).
[48] Global Peace Index 2010, p. 38.
[49] Brauer and Marlin (2009, p. 6).
[50] See UNDP (2006, p. 11) for an overview of various national figures of economic costs of armed conflict according to different valuation methods see Geneva Declaration Secretariat (2008, pp. 92-99).
[51] Brauer and Marlin (2009, p. 6).
[52] See World Bank (2009); Geneva Declaration Secretariat (2008, pp. 89-108).
[53] For a review on the relationship between security and development see Sambanis (2004), Justino (2006), and Zoellick (2008).
[54] For scholarly contributions see Steward (2003), Fukuda-Parr (2007), and Asiedo (2008).
[55] CICS (2005).
[56] Based on Stucki (2010a).
[57] It is worth noting, however, that 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, 2006).

[58] Collier et al. 2003.
[59] Stewart (2008a) defines horizontal inequalities as inequalities in ecnomic, social or political dimensions of cultural status between culturally defined groups.
[60] Stewart (2008b, pp. 286-291), Gurr (1993), Gurr and Moore (1997).
[61] Nafziger et al. (2000), Collierand Hoeffler (2000), Stewart (2001), Gates and Murshed (2005), and Cramer (2003).
[62] Neapolitan (1999). A similarly robust result has been found between inequality and health. See WHO (2008).
[63] Waiselfisz (2010, p. 148).
[64] Lederman et al (2002).
[65] Fajnzylber et al., 2001 cited in Demombynes and Ozler (2002, pp. 10-11).
[66] Neumayer (2005).
[67] Krkoska and Robeck (2006), Mihalache (2008).
[68] UNODC and World Bank (2007), Bourguignon (1999).
[69] Based on Sérgio de Lima and Maura Tomesani (2010).
[70] Ibid, pg1.
[71] See Lima (2010).
[72] For the analysis with the six capitals data from the National Household Sample Survey for the year 2006 was used. MDG indicators of income and employment do not permit the breakdown of information on the intra-municipal scale. Information for the MDG indicators of health and violence, is provided by the Ministry of Health at http://www.datasus.gov.br.
[73] The analysis uses the Survey of Living Conditions conducted by Seade Foundation in 2006 to assess the attainment of MDG indicators related to income, employment, sanitation and housing conditions. This consists of a household survey sample of approximately 20,000 households, including 5,500 respondents in the Metropolitan Region of São Paulo. For MDG indicators related to health conditions and violence, we used information from the Civil Registry of the State of São Paulo, made available by Seade (http://www.seade.gov.br). The analysis tested the differences (means and proportions) between the two groups of districts with a significance level of 5%. The data derived from the Civil Registry drew on a Pearson coefficient.
[74] 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.
[75] Source: Seade Foundation. Research on Conditions of Life, see Sérgio de Lima and Tomesani (2010)
[76] Based on Abbass (2010).
[77] Pézard and de Tessières (2009), Basedevant (2009), Uvin (2007), Bundervoet et al. (2008), Guarcello et al. (2004).
[78] Figures based on the Armed Violence Observatory of Burundi. Pézard and de Tessière (2009, p. 27).
[79] See United Nations Statistics Division. *The Official UN site for MDG Indicators: Burundi pages.* http://unstats.un.org/unsd/mdg/Data.aspx.
[80] Cliffe et al. (2005), Berman and Muggah (2001).
[81] Table 2 based on Abbass (2010).
[82] Baigana and Bannon (2004, pp. 10-13).
[83] Uvin (2009, p. 160).
[84] Baigana et al. (2005, pp. 3-12).
[85] ISTEEBU Database. (2005) http://www.isteebu.bi/index.php?option=com_ content&view=article&id=61&Itemid=75.
[86] Brachet and Wolpe (2005, p. 16).
[87] Uvin (2009).
[88] Pézard and Florquin (2007).

[89] Toole and Waldman (1997), Pézard and de Tessières (2009).
[90] Brachet and Wolpe (2005, p.5).
[91] Cliffe et al. (2005).
[92] Human Rights Watch (2004, p.7).
[93] Rackley (2005).
[94] This section is based on Stucki (2010b).
[95] At 1995 prices. Makdisi and Sodaka (2005, p. 69).
[96] See Small Arms Survey (2009).
[97] LAVA (2010).
[98] This figure is composed of USD2.8 billion for the reconstruction of destroyed infrastructure (roads, bridges, airports, power plants, schools, hospitals and houses), and another USD 2.2 billion for lost income (UNDP, 2009; World Bank, 2008).
[99] All figures taken from Reconstruction and Recovery Cell, Office of the Prime Minister; quoted in UNDP (2009).
[100] Makdisi and Sadaka (2005, pp. 69, 82). Figures on the casualties are disputed. The displacement has also been estimated at 1 million and estimates of deaths from the war varied between around 60,000 to 250,000. See for example Labaki and Rjeily (1987, pp. 33-36).
[101] Knudsen (2005).
[102] UNDP (2009).
[103] Interview with Kamal Hamdan, May 2010.
[104] Based on World Remittances Factbook Data Sheet available at http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html.
[105] Norton (2000).
[106] A critical problem in northern Lebanon is the lack of interest shown by political parties. Meanwhile, while many southerners profit from a subsidiary social network through Hezbollah, the north is increasingly exposed to the influence of extremist groups, such as Hizb ut-Tahrir and Fatah al-Islam that do not have the comparable social networks. Interview with Usama Safa, May 2010.
[107] Source: UNDP (2009).
[108] Norton (2000).
[109] Explosive remnants led to the death of 28 civilians and injured another 244 people, many of which work in the agricultural sector.
[110] United Nations (2009).
[111] Social control does not only prohibit violent acts against members of the own community, but prevents committing violent acts against members of another one because they could result into inter-communal violence.
[112] Richani (2007).
[113] Based on Barolsky and Wamucii (2010).
[114] Presidency of the Republic of South Africa (2009, p. 25).
[115] Bhorat and van der Westhuizen (2009, p. 3).
[116] Presidency of the Republic of South Africa (2009, p. 21).
[117] Bhorat and Oosthuizen (2007)..
[118] Presidency of Republic of South Africa (2008 p. 75).
[119] CSVR (2008, p. 22).
[120] De Kock (2007).
[121] Data drawn from South African Police Service, Department of Police, Crime Statistics: April 2008-March 2009.
[122] Data drawn from The Presidency of the Republic of South Africa (2009).
[123] Data drawn from Bhorat and van der Westhuizen (2009).
[124] Ibid.

[125] Data drawn from Statistics South Africa (2009).
[126] CSVR (undated, p. 40).
[127] Pelser (2008 p. 11).
[128] Fleshman (2001) cited in Economic Commission for Africa (2005, p. 178).
[129] Burton (2006, p. 2).
[130] Becker (1968) as cited in Demombynes and Ozler (2002, pp. 3-4).
[131] CSVR (undated),p. 46).
[132] Posel (2002, p. 16).
[133] Jefthas and Artz (2007).
[134] Ibid.
[135] *South African Schools Most Dangerous in the World: Only 23% of Pupils Safe - 5th February 2008.* Based on statistics drawn from the Progress in International Reading Literacy Study of 2006.
[136] CJCP (2008),
[137] 'Improved data and monitoring tools are crucial fro 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.' United Nations (2010a, p. 74)
[138] See Geneva Declaration Secretariat (2010, forthcoming).
[139] UNSG (2009, p. 19).
[140] Better known observatories include the Crime Observatory in Jamaica. (http://www.vpajamaica.com/), the Madrid security observatory; the Bogota observatory; municipal observatories in El Salvador, Guatemala and Panama; the Regional Observatory on Security Policies in Italy; the *Observatorio Centroamericano sobre Violencia*; and the *Observatoire National de la Délinquance* in France. See, for example, Geneva Declaration (2010-forthcoming). .
[141] United Nations (2010b).
[142] UNDP and Geneva Declaration Secretariat.
[143] Geneva Declaration Secretariat (2010).
[144] Geneva Declaration (2010, forthcoming).
[145] See Geneva Declaration (2010-forthcoming) and Prince et al. (2009).
[146] Capobianco (2005).
[147] Geneva Declaration Secretariat (2010-forthcoming).
[148] We defined a "strong" relationship the MDG indicators with an absolute value of the correlation coefficient higher than 0.5, medium between 0.5 and 0.3 and low for lower than 0.3. We refer to "none" when correlation is not significantly different from zero.
[149] The person coefficient is widely used in statistics to measure the sense and the degree of the relationship between two linear related variables. A normal distribution of the variables is assumed to obtain the coefficient, but non-normality not necessarily implies spurious results. A very important feature is that the Pearson correlation is sensitive to outliers, thus in presence of them it could be biased.
[150] A Spearman coefficient is a non parametric method that makes no assumptions concerning the shape of the distribution from which sample data were drawn. This correlation is less sensitive to outliers and detects monotonic trends, so it is not biased for the polynomial pattern of the relation between variables; therefore it does not decrease if the degree of the polynomial in *x* increases. The Kendall coefficient is a non-parametric test that does not required any assumptions related to the distributions. It can be used as an alternative of Spearman rank correlation.
[151] The normal distribution is an important theoretical model frequency used in inferential statistical analysis. Most of the frequency of occurrence or the probabilities are at the centre of its density function which coincides with the mean, the mode and the median of

the distribution. Since the distribution is symmetric, the probability of having a value greater than a certain positive quantity is equal to the probability of having a value lower than the negative of the same quantity.

[152] The difference in the number of countries among MDG and Homicide is for 5 additional cases in the homicide database: England and Wales, Hong Kong Special Administrative Region of China, Macao Special Administrative Region of China, Northern Ireland, United Kingdom of Great Britain and Northern Ireland. The MDG has 8 additional countries: European Union (EU), Czechoslovakia [former], Gibraltar, Democratic Yemen [former], Union of Soviet Socialist Republics [former], Channel Islands, Yemen Arab Republic [former], Yugoslavia [former Socialist Federal Republic].