

Civilian War-Related Deaths in Afghanistan, 2008-2010

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Purpose

The purpose of this study was to examine the geographic distribution of the civilian war-related deaths caused by insurgents and NATO forces compared to the mean civilian war-related deaths in Afghanistan for the years 2008 to 2010 at the Regional Command (RC) level.

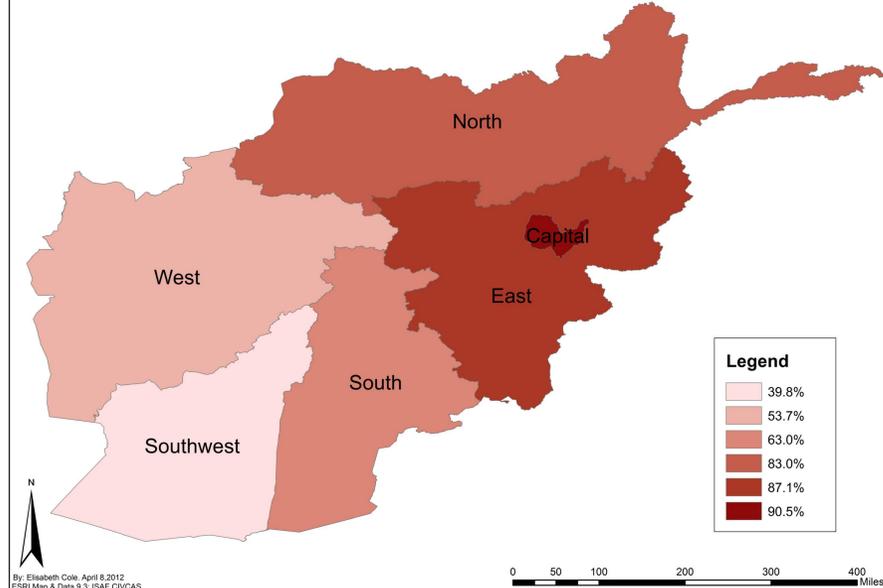
Hypothesis

The greatest number of civilian war-related deaths will be in the south where most of the NATO forces are located and where the areas controlled by the insurgents are located. Most of the civilian deaths caused by NATO forces will be located in the south where NATO forces are fighting against the insurgents. However, civilian deaths caused by in the north because of recent attempts to claim the capital.

Methods

The data from Map 1 was created by finding the mean number of deaths per RC, dividing each mean by the 2009 population estimate for each RC and multiplying the result by one million. The data for Map 2 was created by calculating the total number of deaths per point*. Data was then mapped on a digital elevation model of Afghanistan with RC borders as reference lines. The data for Map 3 was created by dividing the mean number of deaths caused by insurgents per RC by the mean number of deaths per RC. The data for Map 4 was created by dividing the mean number of deaths caused by NATO forces per RC by the total mean per RC. A chi-squared test was calculated to determine if the frequency of civilian deaths by NATO forces and insurgent are equal.

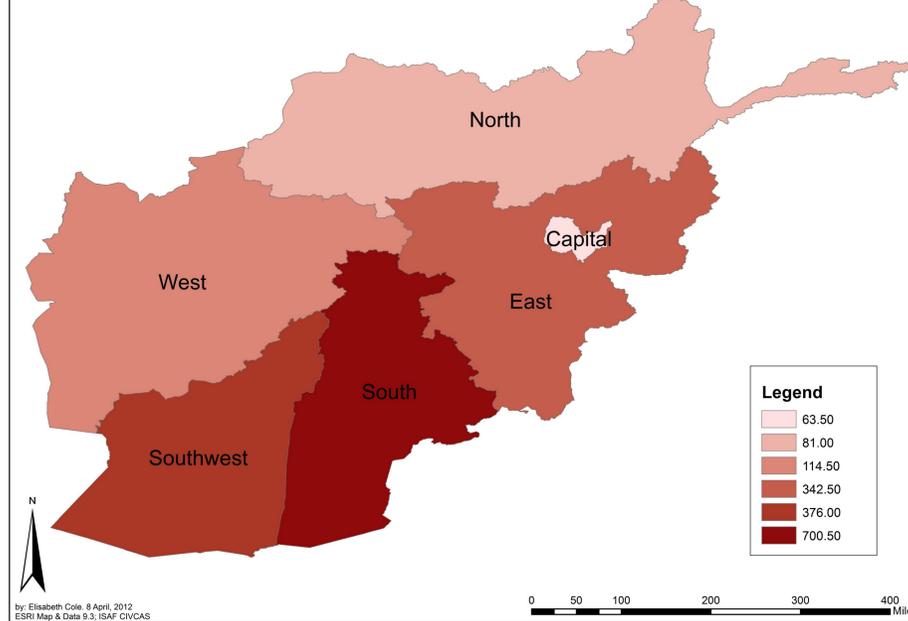
Percent of Total Civilian War-Related Deaths caused by Insurgent Forces
ISAF Regional Command, 2008-2010



Map 3.

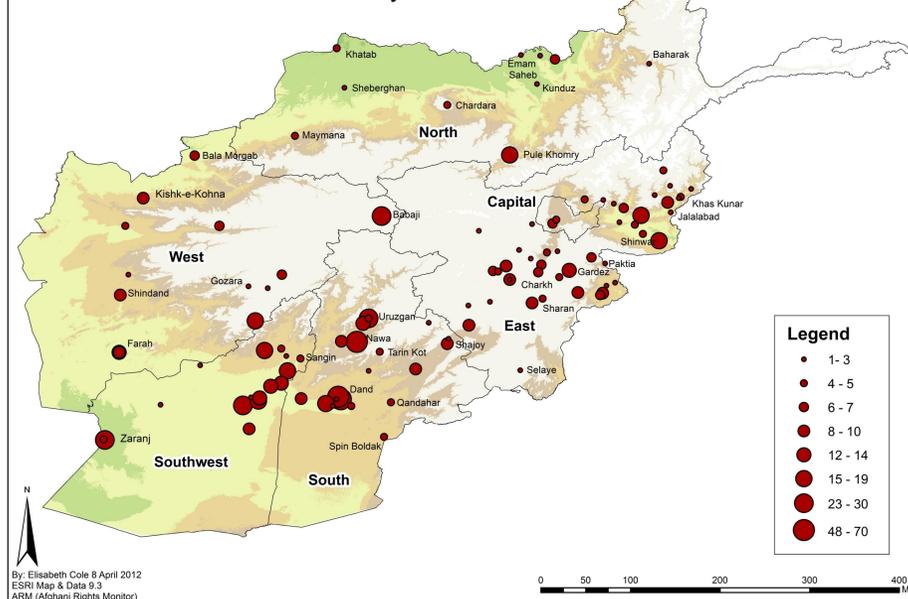
Data was obtained from ESRI Map & Data 9.3 Afghani Rights Monitor(ARM), International Security Assistance Force Casualty database (ISAF CIVCAS) and United Nations Assistance Mission in Afghanistan database (UNAMA). All maps are in South Asia Albers Equal Area Conic

Mean Civilian War-Related Deaths per Million Capita
ISAF Regional Command, 2008-2010**



Map 1.

Total Civilian War-Related Deaths by Location
January 2010 - June 2010



Map 2.

Observed Data 2009-2010*				Row Percent			
District	Insurgent	NATO	TOTAL	District	Insurgent	NATO	TOTAL
RC Capital	115	4	119	RC Capital	95.04%	4.96%	100%
RC East	597	44	641	RC East	93.14%	6.86%	100%
RC North	136	8	144	RC North	91.28%	8.72%	100%
RC South	883	118	1001	RC South	77.32%	22.68%	100%
RC Southwest	300	127	427	RC Southwest	57.03%	42.97%	100%
RC West	123	42	165	RC West	69.89%	30.11%	100%
TOTAL	2154	343	2497				

$\chi^2=15,314$ *** Significant at < 0.00001 level

Table 1.

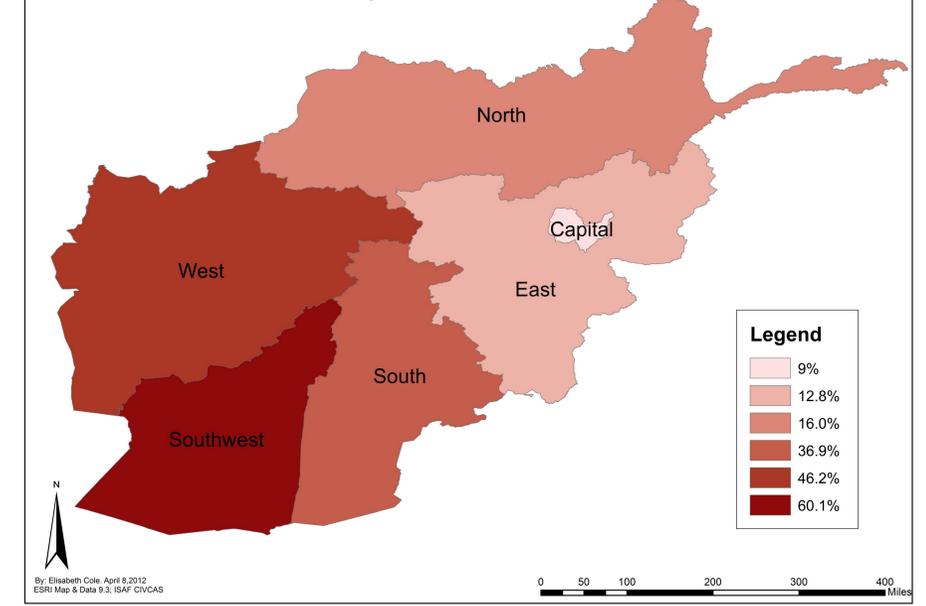
Results

Cartographic results regarding the overall location of civilian war-related deaths are presented in Maps 1 and 2. Cartographic results regarding the percentage of total civilian war-related deaths by warring party are presented in Maps 3 and 4. The Chi-Squared test statistics are presented in Table 1-the test statistic and p-value are extremely significant. Maps 1 and 2 show that the majority of civilian war-related deaths are in the south. Map 3 shows that civilian deaths caused by insurgents are concentrated in the north – ninety percent of the total deaths in the Capital are caused by insurgents. Map 4 shows that civilian deaths caused by NATO forces are concentrated in the south – sixty percent of the total deaths in RC Southwest are caused by NATO forces.

Conclusion

The highest number of deaths is in southern Afghanistan with the most deaths occurring in RC South. Deaths caused by NATO forces are located in the southwest areas while the deaths caused by insurgents are located in the northeast area. The Chi-Squared Test shows that the frequency of civilian war-related deaths by NATO forces and the frequency of civilian war-related deaths by insurgent forces are significantly different. Further statistical tests are necessary to determine if the actual number of insurgents or ,the actual number of NATO forces, that effected the total number of civilian war-related deaths.

Percent of Total Civilian War-Related Deaths caused by NATO Forces
ISAF Regional Command, 2008-2010



Map 4.

*Point data was geocoded by village name by the author.
Mean civilian war-related deaths by insurgent forces was calculated using the years 2009-2010
Mean civilian war-related deaths by NATO was calculated using the years 2008-2010