CAN WORLD PEACE BE BUILT ON EMPTY STOMACHS? 1
Shahriar Kibriya, Yu Zhang, Edwin Price

This article attempts to investigate the allocation strategies and efficiencies of foreign intervention/assistance in conflict prone developing nations. The analysis is initiated by examining the rationale and disbursements of sectoral foreign intervention to Iraq and Afghanistan from 2002-2010. It is discovered that assistance for agriculture and food security are extremely low in these conflict zones. However, a panel regression analysis of conflict and sectoral aid provide evidence that agricultural and food security assistance decrease conflict. Food security has a negative effect on intra-country violence while aid for agricultural development decreases international conflict. Although aid for some sectors increase conflict/violence, aid disbursed for most other important sectors do not have a statistically significant negative effect on international conflict or intra-country violence.

Key Words: Foreign aid effectiveness, conflict, violence

1 Introduction

During the last 10 years, the total amount of foreign funds spent through defense and development in Afghanistan was 1300 billion USD (OECD, 2010; Belasco, 2006). The total amount of agricultural and food security funding allocated to Afghanistan in this period was 1.2 billion USD. It appears that the donor countries strategy of promoting peace in Afghanistan does not prioritize rapid agricultural reform and prosperity. On aggregate defense spending and assistance for governance lead the intervention funding in Afghanistan. Education, agricultural development and food security have been relatively underfunded. Data collected from the Global Terrorism Database (GTD) and the Uppsala University database demonstrate that conflict has risen about 20% in the last year. The number of hungry people in the world has also reached a historic high at 1.02 billion people, a 100 million increase from 2009 (FAO Database, 2011). Hence, it can be concluded that at least some components of foreign assistance are not accomplishing their intended objectives. Echoing these facts, foreign assistance and spending policies have been criticized by contemporary academics (Easterly, 2004, 2007; Moyo, 2009; )

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1 This research was funded by the Howard G. Buffett Foundation. We would like to thank David Bessler for his contributions.
Azam, 2004, 2006; Svensson, 2000; Sachs, 2006). While the jury is still out on the efficiencies of foreign assistance and intervention as a whole, criticism and advocacy on sectoral aid allocation and effectiveness have been an ongoing debate, too. The goal of this research is to contribute to the foreign and policy reform debates and assert the need for agricultural assistance and food security\(^2\) in developing and conflict-prone nations. Three policy issues are explored through this article. First, Development polices in extreme conflict zones such as Iraq and Afghanistan need to be re-evaluated. Second, assistance for agricultural development and food security is underfunded. Third, the successful implementation and allocation of agriculture and food security assistance can reduce conflict.

Most scholars and policy makers agree that foreign intervention, both military and civilian, is provided to accomplish five key objectives: eradicating poverty; enhancing livelihoods of the impoverished in developing countries so that they can achieve equal terms of trade; creating a political hegemony; maintaining a sound diplomatic relationship; and ensuring international peace and harmony. The last two objectives are directly related to the mitigation of conflict and violence. Officially, the practice of foreign development commenced with the Marshall Plan. The quintessential idea of the program was to assist conflict prone European countries attain stability. At present time, diplomatic and political scenarios have become far more complex, yet one of the central ideas remains keeping the developing nations out of conflict. A comparative quantitative analysis comprising sectoral and their effects on conflict could provide an understanding of the efficiencies of assistance given to each different sector. Although, sectoral foreign assistance has been advocated and scrutinized by academics, a comprehensive analysis focusing on conflict has not yet been accomplished. Most of the literature on sectoral assistance

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\(^2\) We have differentiated agricultural assistance and food security aid for this article. Agricultural development assistance refers to indirect endeavors such as: technical training, capacity building and extension outreach, whereas food security assistance refers to direct endeavors such as: direct food assistance.
(Azam and Delacroix, 2006; Azam and Laffont, 2003; Feyzioglu and Swaroop, 1998; Balesco, 2006) are either theoretical or do not consider all the aid recipient nations. With regards to the dearth of quantitative literature on sectoral foreign assistance, we note that, until recently sectoral foreign assistance data was not available. Even now only country-wise data from 2002 has been made available by OECD and USAID. Data for international and intra-country violence is also difficult to amass. Still an examination of sectoral foreign assistance in mitigating conflict is one of the most germane issues to be addressed in the foreign development literature.

The remainder of this article is structured as follows. Section 2 provides a review of the relevant literature on foreign assistance; Section 3 describes the data and the variables; Section 4 discusses the intervention strategies in conflict zones; Section 5 presents the empirical results and policy implications and Section 6 offers conclusion and recommendations.

2 Literature review related to food aid

The effect of foreign assistance on the recipient countries has been extensively studied in the past several decades (for example, see Morgenthau, 1962; Collier, 2007; Burnside & Dollar, 2000). Burnside and Dollar (2000) discovered that aid is only successful in countries with good policies and governance. Collier (2007) claimed more attention should be devoted towards building good governance in smaller, fragile nations. However, most of the existing studies are interested in evaluating the performance of total foreign aid, under the assumption that aid allocated to different sectors has homogenous utility in increasing the economic development and mitigating conflict. This assumption may be violated in the real world, leading to the need for the sectoral aid analysis. The literature on sectoral assistance (Azam and Delacroix, 2006; Azam and Laffont, 2003; Feyzioglu and Swaroop, 1998; Balesco, 2006) mainly focuses on either theoretical modeling or case studies. With regards to the dearth of quantitative and empirical literature on
sectoral foreign assistance, we note that, until recently sectoral foreign assistance data was not available.

During the last 10 years, food security assistance comprises less than 2% of the total aid allocated to developing countries. Considering that most of the developing countries have agrarian economies with a high proportion of hungry citizens these percentages are relatively low. For instance, the number of hungry people in the world reached a historic high at 1.02 billion people at 2010 (FAO, 2011). Hunger as a cause of conflict has been documented by both historical accounts and quantitative studies by researchers. The most famous example illustrating the impact of hunger dates back to the 1789 French Revolution, which followed a bad harvest in 1787 that “stirred the whole countryside into a renewed outbreak of rebellion” (Rudé, 2014). Similar cases can also be observed in the Horn of Africa and the Sahelian nations in the 1970s, food shortages in those countries triggered civil conflicts and even overthrew Emperor Haile Selassie's rule in Ethiopia. Until recently, rise in food prices occurred in 2007-2008 and 2010-2011 was associated with a revolutionary wave of protests, riots, and civil wars in North Africa and Middle East. On the other hand, the correlation and even causality between food insecurity and conflict have been found by several econometric studies (Berazneva and Lee 2013; Arezki and Brückner; 2011; Bellemare, 2015). Hunger may induce intra-country violence via not only absolute food shortage but also relative deprivations. The latter channel explains the reason why food-related riots occurred in cities and the majority of the participants were urban poor people and working class (Walton and Seddon, 2008). Generally, the relative deprivation of equal access to all kinds of resources (job opportunity, welfare distribution, foreign aid, etc.), and just standard of living through food insecurity may result in an increased risk of conflict (Messer et
As the main component of international humanitarian aid, food aid is one of the key assistance tools to help alleviate hunger and mitigate the risk of violence.

3 Data and Variables

The primary variables of interest in this article are intra-country violence, inter-country conflict and sectoral assistance data. Data on international conflict from 1947-2010 has been made available through the Uppsala University database. This data is labeled as international conflict, because in each of the violent events, at least one of the parties represents a government. In order to reduce the impacts of large variance in the original data, the data was coded, considering the intensity of the conflicts. The intra-country violence data was collected and coded from the University of Maryland, Global Terrorism Database. They report incidents of assassination, hostage-taking, armed and unarmed assault, bombing, explosion, attack on infrastructure and hijacking in all countries from 1970 to 2010. The total number of incidents every year in each country was recorded in the sorted data set.

Sectoral aid data for agricultural development, government administration & civil society, developmental food aid and food security programs, economic infrastructure & services, health and education was collected from the OECD database. Regrettably, the aggregate sectoral aid data at the country level is available only from 2002. It should be mentioned that aggregate data on sectoral assistance from 1971 is available through OECD database. Yearly data for each aid receiving country was recorded. The aggregate foreign assistance data that reflects the combination of loans, grants, foreign direct investment and assistance were also collected the
OECD database. To better understand the underlying meanings and scopes of foreign aid by sector, definitions of each sectoral aid are listed as follows:\textsuperscript{3}:

\textit{Education}: Development Co-operation Directorate (DAC from here on) of OECD defines aid to education as including education policy and administrative management, education facilities, educational training and research, ranged from basic education, secondary education to post-secondary education.

\textit{Health}: DAC definition of aid to health includes basic health care, infectious disease control, health education and health personnel development, health sector policy, and other medical health services.

\textit{Government administration & civil society}: DAC defines aid to government administration civil society funding towards institution-building assistance to strengthen core public sector management systems and capacities, departments of regional and local government, anti-corruption commissions and monitoring bodies, justice sector systems and procedures, as well as support to the exercise of democracy and diverse forms of participation of citizens during and beyond elections, human rights, and women's equality.

\textit{Economic infrastructure & services}: DAC aid for economic infrastructure & services includes support to infrastructure, policy making and training of transportation, storage, communications, energy generation and supply. Also, aid to banking and financial services considered to be a part of this sector.

\textit{Agriculture}: In DAC’s definition, ‘agriculture’ has a broader sense, which consists of forestry and fishing. Aid to agriculture includes agricultural sector policy, agricultural land and water resources development, agricultural productions improvement, and agricultural training and research.

\textsuperscript{3} The definitions and scopes of the different sectoral assistance have been taken from the OECD database.
Food: The DAC defines aid to food security as supply of edible human food under national or international programs including transport costs. Cash payments made for food supplies are also regarded as food aid. However, emergency food aid is excluded.

Other: Aid to water and sanitation, other social infrastructure and services, industry and mining, environmental protection, and non-food commodity assistance are included. However, aid to military is excluded.

We use the sectoral aid data for 123 developing countries from 2002 to 2010, combined with conflict and violence data. In the following analysis, international conflict and intra-country violence are treated as the dependent variables. Conflict is measured by grades on the scale of death numbers, with higher grade indicating more intensive conflict events. The violence data comprises the number of events in a country over the period of a year. We report the cumulative max, min and average value of conflict and violence by country in Table 1.

| Table 1: Summary statistics of Dependent Variables |
|-----------------------------|-----------------|
|                             | Conflict        | Violence        |
| Cumulative Max              | 18              | 6213            |
| Cumulative Mean             | 2.4553          | 178.8374        |
| Cumulative Min              | 0               | 0               |
| Cumulative Std.dev          | 4.7809          | 700.0913        |
| Number of observations      | 1108            | 1108            |

The sample consists of 1108 observations for each variable. Table 1 shows that from 2002 to 2010 the most conflict-prone country, which is India has a cumulative maximum yearly conflict index of 18. The average cumulative grade for each developing country is 2.4553, which means that at least 1000 people died in battles in the given period. Iraq suffered the highest cumulative number of death caused by intra-country violence is 6213, while the cumulative average amount of death is about 179 for each country.
The independent variables for the regression analysis (performed in section 5) consist of aid for Education, Health, Government and Civil Society, Economics Infrastructure & Service, Agriculture (including forestry and fishing), and Food Security along with an aggregate estimate for foreign assistance for all other sectors. Table 2 presents the summary statistics of the independent variables by country. We make three interesting observations from table 2. First, most of the variables display a wide variation across countries. Second, on an average, economic infrastructure and government& civil society obtain most of the money, while agriculture and food aid/ food security draw less attention. The third point is that the signs of minimum value of Infrast and others are negative. OECD rather vaguely claims that the negative value comes from over spending a countries development budget.

<table>
<thead>
<tr>
<th></th>
<th>Educ</th>
<th>Health</th>
<th>Govern</th>
<th>Infrast</th>
<th>Agri</th>
<th>Food</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max</strong></td>
<td>841.83</td>
<td>528.42</td>
<td>3068.52</td>
<td>2079.04</td>
<td>542.28</td>
<td>343.14</td>
<td>16173.43</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>53.88</td>
<td>33.47</td>
<td>69.49</td>
<td>87.92</td>
<td>27.38</td>
<td>9.48</td>
<td>356.62</td>
</tr>
<tr>
<td><strong>Min</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-0.86</td>
<td>0</td>
<td>0</td>
<td>-0.57</td>
</tr>
<tr>
<td><strong>Std.dev</strong></td>
<td>97.00</td>
<td>62.42</td>
<td>172.73</td>
<td>190.26</td>
<td>52.49</td>
<td>22.28</td>
<td>879.23</td>
</tr>
<tr>
<td><strong>Number of observations</strong></td>
<td>1108</td>
<td>1108</td>
<td>1108</td>
<td>1108</td>
<td>1108</td>
<td>1108</td>
<td>1108</td>
</tr>
</tbody>
</table>

Notes: The numbers inside the table are in millions of US dollars.

4. Case Study

We initiate our quantitative analysis with graphical illustrations and discussions on the disbursement strategies of sectoral foreign aid. Figure 1 depicts the total foreign assistance disbursed for education, health, government and civil society, economic infrastructure, agricultural development and direct food aid from 1971 to 2010. Aid for economic infrastructure has been consistently allocated the highest amount of money. Even though most of the aid
receiving nations has agrarian economies, from 1987 the amount of assistance for agriculture has declined rapidly.

![Figure 1: Time trends of assistance from all donors disbursed by sector, 1971-2010 (US$ millions)](image)

Source: OECD.

Ever since aid for rural development decreased (from the late 1980s through the early 1990s) both international- and intra-country conflict have markedly increased. Figure 1 shows that funds for government administration and civil society have been increasing since 1999. This shift can largely be attributed to the realization by policy makers and academics that foreign aid can only be beneficial for countries with good governance. Hence, foreign aid allocators decided to spend significant amounts of funds to create good governance in conflict-prone nations. Academics (Azam et al., 2004, 2003) have also argued that assistance for education would essentially convey the knowledge of the futilities of war, violence and conflict. Increased aid for education
can also lead to better livelihoods of the poor. In accordance with those recommendations, aid for education has also significantly increased over time. Aid for health care has been neglected compared to the other sectors, though it has gradually increased since the turn of the millennium. Millennium development goals which have strongly supported health care assistance may be a major reason for that increase. Figure 2 shows that economic infrastructure and services have obtained the greatest share of assistance. Middle and upper income countries with “good governance,” such as Brazil and the Philippines, receive most of their assistance in the form of economic infrastructure and services. Aid for food security and food safety historically has been the most neglected and the lowest form of aid.

**Figure 2: Percentage of foreign aid by sector for 123 countries, 2002-2010**

Source: OECD.

Sectoral and specific data on military spending/assistance is not available on public domain. According to the Congressional Research Service (CRS) report from 2001 to 2011, the United States Department of Defense (USDOD from here on) has allocated $336 billion for Afghanistan.
(Belasco, 2011). According to our estimation through the Belasco reports (2011) the USDOD alone has spent more than $92 million a day in Afghanistan during this period. Waldman (2008) reports that USDOD spending comprises only one-third of the total military expense on Afghanistan. In 2008 USDOD stated “shaping the civil situation” is equally significant to their mission as is “winning battles” on foreign soil (US Military Manual 2008, cited from the International Herald Tribune). Along those lines the aggregate percentage of US foreign assistance disbursed by the Pentagon has been gradually increasing from 6% in 2002 to 22% in 2008 (Center for Global Development, 2008). Recent efforts by the USDOD for development in Africa, Iraq and Afghanistan imply this philosophy. In each of these missions, scientists, social workers and medical doctors have worked with the Armed Forces. The USDOD Task Force for Business and Stability Operations (TFBSO) has been created to “reduce violence, enhance stability, and restore economic normalcy” in conflict-prone areas with the assistance of military aid.

We find that aid (non-military) allocation to Afghanistan has not been as much compared to other developing conflict prone nations. Waldman (2008) reports that since 2001, Afghanistan received $57 per capita aid, while Bosnia and East Timor, after their intervention, received $679 and $233 per capita, respectively. The OECD data shows that since 1999, Afghanistan has received per capita aid of $92, whereas conflict-laden Serbia and Bosnia received per capita aid of $323 and $313, respectively. Even strategically located European and South American non-conflict prone nations, such as Chile and Turkey, received per more capita aid; $204 and $124 respectively, over the same period.

Figure 3 demonstrates the trend of sectoral aid in Afghanistan from 2002 to 2010. Aid for government and civil society administration has consistently been increasing and receives far
more attention than any other sector. Since governance and civil society have been identified as very weak in Afghanistan, donors are inclined to invest more funds to strengthen civil society. In

**Figure 3: Sectoral aid trends in Afghanistan, 2002-2010 (US$ million)**

Source: OECD DOD.
a comprehensive report, Oxfam International policy advisor Waldman (2008) claimed that Afghanistan is underfunded by international agencies and governments. He also claims that neither is the allocated aid to Afghanistan achieving its perceived goals. Weak governance, inadequate government human capacity, lack of infrastructure and widespread corruption in Afghanistan have been argued to be the prime reasons for this inadequacy (Waltman, 2008). Both economic infrastructure and government administration aid have received extra attention, while all other major sectors of aid were relatively neglected. Food aid and food security assistance have been marginal and decreasing. After a sustained period of non-investment in agriculture and hunger in Afghanistan, agricultural aid has recently increased. According to the World Food Program, 85% of the total household income in Afghanistan was spent on food (Chelala, 2008). In 2008, the Afghan Ministry of Health also issued an official warning that more

the 1.6 million children under the age of five and thousands of women could die in 2009 as a

Source: OECD.
result of the lack of food and medical care (Chelala, 2008). Even after these apprehensions, predicated calamities, assistance for health care, food security and agriculture have not increased nearly as much as assistance for government or civil affairs. Aid for education has been neglected as well.

Figure 4 shows that the total aid for health, agriculture, food safety and security comprises only about 10% of the total money allocated for Afghanistan, while government and civil affairs aid and aid for economic infrastructure have been allocated 40% of total funds.

A similar analysis of Iraq provides a discouraging picture as well. According to the Congressional Research Services (CRS), the total funds that have been allocated for Iraq from the USDOD have exceeded $800 billion (Belasco, 2011). Belasco also reports that DOD funding has also been used to build infrastructure, stability operations, business development and governance. DOD funding has declined in recent times, but so has the total development assistance provided to Iraq. While much interest is expressed in Iraq by the foreign assistance community, Iraq’s per capita Official Development Assistance of $159 (since 1999) is less than other developing nations in either conflict or non-conflict zones. The OECD and World Bank databases show that Slovenia, Uruguay and Azerbaijan received $198, $192 and $164, respectively, per capita aid every year since 1999. All of these nations are less conflict-prone than Iraq and are probably advantageously located for donors. We discovered that from 1999, Iraq’s per capita aid ranks 47th among all developing economies. As might be expected, small islands and nations with very low populations show higher per capita aid than larger countries. Even after considering economies with more than 2 million populations, Iraq ranked 12th in obtained assistance.
Figure 5 shows the trends of disbursed ODA in most important sectors in Iraq. The total money allocated for government administration and civil society, along with economic infrastructure, has led the foreign assistance category since the multi-national force entered the region. After 2005, both of these sectors received less aid, but they still have allocated over $1.2 billion in 2010. Apart from these two (Governance and Infrastructure) sectors, the others have been relatively neglected. Compared to the huge amount of funds invested by the DOD and other agencies, aid for agriculture and food security is quite low. A United Nations report published in 2005 claimed that malnutrition among children had doubled to 8% since the US lead invasion (Reported by BBC 2005). In their reports and statements, the WorldFood Program (WFP) constantly asked for funding, stating that Iraq had a “dismal shortage” of food, with over three million starving people. A published WFP food security survey claimed that over 27% of all children are chronically malnourished, even after receiving food through the government’s Public Distribution System (UN Food Program Report, 2005). Calum Gardner, the WFP country director in Iraq stated, “The hungry in Iraq should be at the top of donors’ lists; instead, they seem to be at the bottom” (Source: UN report 2005).

Figure 5: Sectoral aid trends in Iraq, 2002-2010 (US$ millions)
Figure 6 shows that from 2002, food security and agricultural development did not receive even 1% of the cumulative non-military aid disbursed in Iraq. Trend-wise, aid for health and education in Iraq has also been decreasing. Although receiving more than agriculture, these sectors are only allocated 2% and 1%, respectively, of the total ODA.

**Figure 6: Foreign aid by sector in Iraq, 2002-2010**
5. Empirical Analysis

We estimate a linear panel model for each dependent variable:

\[
F(Conflict/Violence) = \beta_0 + \beta_1 Educat + \beta_2 Health + \beta_3 Govern + \beta_4 Infrastructure + \beta_5 Agriculture + \beta_6 Food + \beta_7 Other + \alpha_1 C_1 + \alpha_2 C_2 + \ldots + \alpha_{121} C_{121} + \alpha_{122} C_{122} + \delta_1 T_1 + \delta_2 T_2 + \ldots + \delta_7 T_7 + \delta_8 T_8
\]

Table 3 depicts the effect on international conflict. We portray the results of linear panel model (PLM), and one year lagged linear panel model (Lagged PLM) respectively. Our data set contains 123 developing countries, each of which includes 9 observations measured for 9 year period. Thus, our data are balanced, cross-sectional and time-series. It is necessary to employ linear panel model to investigate the coefficients of variables. In addition, it can be argued that to capture the real effect of sectoral assistance, one should study the lagged values of foreign assistance in different sectors. For example: agricultural programs and policies undertaken in 2002 may take a year to be fruitful and decrease conflict/violence in 2003. Therefore, a lagged
PLM would permit us to construct the aid effectiveness analysis in a longer term. To purge the error term of autocorrelation and heteroskedasticity, we apply dummy variables to the original model. By doing so, both the impact of individual (country) effects and time effects are removed. The variables $C_i$ and $T_i$ are dummy variables taking the values 0 or 1 to indicate the absence or presence of country-effect and time-effect that are expected to shift the outcome.

Table 3: Regressions of Sectoral Foreign Aid on International Conflict

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model: PLM</th>
<th>Lagged PLM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.0641338</td>
<td>-0.0000042</td>
</tr>
<tr>
<td>Educ</td>
<td>-0.0000571</td>
<td>-0.0000042</td>
</tr>
<tr>
<td>Health</td>
<td>0.0008561**</td>
<td>-0.0000562</td>
</tr>
<tr>
<td>Govern</td>
<td>0.0005384***</td>
<td>0.0004561***</td>
</tr>
<tr>
<td>Infrastr</td>
<td>0.0001377</td>
<td>0.0000323</td>
</tr>
<tr>
<td>Agri</td>
<td>-0.0006728*</td>
<td>-0.0009604**</td>
</tr>
<tr>
<td>Food</td>
<td>-0.0002026</td>
<td>0.0006254</td>
</tr>
<tr>
<td>Other</td>
<td>-0.0000512**</td>
<td>-0.0000317*</td>
</tr>
</tbody>
</table>

Notes: *, ** and *** indicate significant at the 10% level, 5% level and 1% level, respectively.

Next, we discuss the estimated relationship between the explanatory variables and international conflict. Controlling for all other types of major assistance, the estimated coefficient of education is negative but not statistically significant. The estimated coefficient of health is positive and marginally significant at 10% level for conflict, implying that investment in health has increased international conflict among developing countries. Similar to health, aid for government & civil society is positively and significantly related to conflict at the 1% level. Moreover, the positive effect is positive and significant in the one year lagged estimation. The estimated coefficient of infrastructure is not significant. PLM shows that the estimated coefficient of agricultural aid is negative and marginally significant at the 10% level. The one year lagged PLM is also negative and statistically more significant (5% level). It is suggested that agricultural assistance decreases
international conflict. The coefficient of Aid for food is not statistically significant. Thus the relationship between food aid and international conflict is ambiguous.

Table 4: Regressions of Sectoral Foreign Aid on Intra-country Violence

<table>
<thead>
<tr>
<th>Variable</th>
<th>PLM</th>
<th>Lagged PLM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-2.291</td>
<td>0.1005149***</td>
</tr>
<tr>
<td>Educ</td>
<td>0.2096577***</td>
<td>0.187554</td>
</tr>
<tr>
<td>Health</td>
<td>-0.0318893</td>
<td>0.0182753</td>
</tr>
<tr>
<td>Govern</td>
<td>0.1393153***</td>
<td>0.1552494***</td>
</tr>
<tr>
<td>Infrast</td>
<td>0.0182753</td>
<td>0.0898698***</td>
</tr>
<tr>
<td>Agri</td>
<td>0.3736233***</td>
<td>0.2980532***</td>
</tr>
<tr>
<td>Food</td>
<td>-0.2866563**</td>
<td>-0.2856768**</td>
</tr>
<tr>
<td>Other</td>
<td>-0.0082196***</td>
<td>-0.0051895**</td>
</tr>
</tbody>
</table>

Notes:* , ** and *** indicate significant at the 10% level, 5% level and 1% level, respectively.

Table 4 shows the effects of foreign aid on intra-country violence. Similar to table 3, column PLM shows the linear panel model estimation in short term, and column Lagged PLM shows the one year lagged regression results. We found that food aid is the only sectoral foreign assistance that is negative and statistically significant related to violence in both PLM and lagged PLM. It is interesting that the lagged negative effect of food aid on violence is stronger than that in the PLM model. On the contrary, aid for education, government & civil society, and agriculture is positive and statistically significant related to intra-country violence.

6. Discussion

Table 5: Summary of the marginal effects by variables on international conflict and intra-country violence

<table>
<thead>
<tr>
<th>Variable</th>
<th>PLM Conflict</th>
<th>Lagged PLM Conflict</th>
<th>PLM Violence</th>
<th>Lagged PLM Violence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>No effect</td>
<td>No effect</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Health</td>
<td>Positive</td>
<td>No effect</td>
<td>No effect</td>
<td>No effect</td>
</tr>
<tr>
<td>Governance</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Sector</td>
<td>Marginal Effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>No effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Security</td>
<td>No effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All other</td>
<td>Negative</td>
<td></td>
<td></td>
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</tbody>
</table>

We discover that no form of sectoral assistance decreases both international conflict and intra-country violence. Table 5 shows the summary of the marginal effects of individual sectoral assistance controlling for all other sectors. As revealed earlier the highest proportion of aid is allocated for government administration and economic infrastructure. We have discovered strong statistical evidence that resources spent on governance are positively associated with both intra-country violence and international conflict. We fail to find any relationship between education aid and international conflict. However, it is discovered that education assistance might increase intra-country violence in contemporaneous time and weakly decreases violence on a longer term. Through the regression analysis we also find positive association of health care aid on international conflict. Agricultural assistance is found to have a negative relationship with international conflict both on lagged and contemporaneous time. However, agricultural assistance showed positive relationship with intra-country violence. Food security assistance portrayed very strong negative relationship with intra-country violence. Nevertheless, we do not find any effect on violence through food security assistance. All other kind of assistance aggregately shows a negative relationship with both international conflict and intra-country violence.

Under our assumption that foreign assistance is tool used to reduce conflict and violence, we conclude that an appropriate mixture of agricultural and food security assistance would be able to mitigate international conflict and intra-country violence. Agricultural assistance has the potential of mitigating international conflict through increased production, capacity and income...
for the citizens. However, agricultural development projects and policies may take time to become successful. On the other hand, food security assistance will mitigate intra-country violence by providing the citizens involved and effected with quick and direct short term solution. Assistance for governance and economic infrastructure as it is disbursed and used now appears to exacerbate violence and conflict. Health care and education assistance also need re-evaluation. May be if more assistance is provided from technical assistance (in agriculture) or food security assistance is enhanced, the other sectors would benefit as well.

7. Conclusion
It is not suggested that aid for governance, basic health care, education or economic development hinder peace and harmony. Rather, the results imply that aid for these areas is not properly directed and executed. For example, if aid to these sectors largely benefits the group of more urban and affluent members of society, welfare disparities increase, possibly creating conditions conducive to violence. Since the overall grants, loans, aid and investments provided to non-agricultural sectors in impoverished conflict-prone nations appears not to serve the purpose of lessening violence, the focus of the aid policy and distribution mechanism needs re-evaluation. Severe conflict-prone nations, such as Iraq and Afghanistan, clearly need more foreign development assistance. Through the case study and regression analysis it was evident that agricultural development and food security assistance is much needed, under allocated and not valued. However, the facts and results presented in this article has established the need of
agricultural and food security assistance to eradicate hunger and mitigate conflict in developing nations.

REFERENCES


Uppsala Conflict Data Program (UCDP) (2012) ‘UCDP Armed Conflict’


