



THE ECONOMIC COSTS OF CONFLICT AND THE BENEFITS OF PEACE:

Effects of Farmer-Pastoralist Conflict in Nigeria's Middle Belt on State, Sector, and National Economies

OVERVIEW

Decades-long violent conflict in the Middle Belt region of Nigeria between farmers and pastoralists has devastated local communities, drastically reducing both security and economic activity. While violent conflict in the Northeast waged by the militant sect known as Boko Haram and violence in the Niger Delta region are perhaps more widely known, conflict in the Middle Belt has undermined economic progress in Nigeria for years. In a country that boasts Africa's largest economy, these resource-based conflicts have impeded market development and economic growth by destroying productive assets, reducing production, preventing trade, deterring investment in the private sector, and eroding trust between market actors.

In order to understand the extent to which these violent conflicts of Nigeria's Middle

Key Findings

- Nigeria stands to gain up to US \$13.7 billion annually in total macroeconomic progress in a scenario of peace between farmers and pastoralists in Benue, Kaduna, Nasarawa, and Plateau alone.
- Reductions in farmer-pastoralist conflict are worth up to 2.79% of Nigeria's officially reported GDP annually.
- States affected by farmer-pastoralist conflicts lost an average of 47% of taxes (Internally Generated Revenue, or IGR) due to these conflicts, through 2012. Specifically,
 - Plateau lost an estimated 75% of potential state revenue.
 - Kaduna lost an estimated 22% of potential state revenue.
 - Nasarawa lost an estimated 45% of potential state revenue.
 - Benue lost an estimated 44% of potential state revenue.
- Benue, Kaduna, Nasarawa, and Plateau have lost up to NGN 347 million combined in IGR, or taxes, due to the conflicts – \$2.3 million in 2010 USD.
- Agriculture—including crop farming and livestock rearing—and trade are the sectors hardest hit by farmer-pastoralist conflict and are also central to the Middle Belt and Nigeria's economy.

Belt affect state- and national-level economies, Mercy Corps undertook research to quantify the economic effects of farmer-pastoralist conflict in Benue, Kaduna, Nasarawa, and Plateau states. To date, research on the economic effects of conflict in other countries generally focuses on civil wars rather than persistent, inter-communal conflict. While the greatest loss to Nigerian society is clearly the cost in human lives, this research provides further evidence for business, policy, and civil society leaders of the destructive capacity of these ongoing farmer-pastoralist conflicts on economic productivity and growth for key states and the country as a whole. The study's findings suggest that for Nigeria to maintain growth, conflict management mechanisms in this region must be strengthened.

BACKGROUND

In Nigeria's ethnically and religiously diverse Middle Belt, violent conflict between pastoralists and farmers arises from disputes over the use of resources such as farmland, grazing areas, stock routes, and water points for both animals and households. A range of factors underlies these disputes, including increased competition for land (potentially driven in part by desertification, climate change, and population growth), lack of clarity around the demarcation of pasture and stock routes, and the breakdown of traditional relationships and formal agreements between pastoralists and farmers. Because livelihood strategies in Nigeria are closely tied to identity and because access to services and opportunities can vary across identity groups, many farmer-pastoralist conflicts take on ethnic and religious hues and are exacerbated along identity lines.

Mercy Corps' Conciliation in Nigeria through Community-Based Conflict Management and Cooperative Use of Resources (CONCUR) program aims to reduce farmer-pastoralist conflicts and increase economic activity among key communities in the Middle Belt, specifically in the states of Benue, Kaduna, Nasarawa, and Plateau. Funded by the UK Department for International Development (DFID), CONCUR works to increase the capacity of local leaders to 1) resolve community conflicts in an inclusive, sustainable manner; 2) increase cooperation across conflict lines around economic activity and natural resource management; and 3) increase support for long-term policy solutions among local and national leaders through business-led research and advocacy.

RESEARCH QUESTIONS

Mercy Corps believes that understanding the scope of economic losses caused by farmer-pastoralist conflicts will help business leaders, policymakers, and influencers to enact long-term policy solutions that will reduce violent conflict and support sustained development. These key actors must also understand the potential economic gains of sustained peace. The overall purpose of this study is to determine how farmer-pastoralist conflicts in the target states affect the Nigerian economy as a whole and by sector, as well as the economic performance of each of the target states, through the following research questions:

- 1) How has farmer-pastoralist conflict affected state government revenues?
- 2) What are the potential economic benefits of peace between farmers and pastoralists in the Middle Belt to Nigeria's economy as a whole?
- 3) What are the respective potential benefits of peace between farmers and pastoralists to each sector of Nigeria's economy?

While it is understood that many actors do reap economic benefits from conflict, this study focuses on the overwhelming economic costs of conflict and benefits of peace to a variety of sectors, as well as to state governments and Nigeria as a whole.¹ Mercy Corps also acknowledges that society incurs enormous social,

¹ In actuality, both conflict and peace produce economic costs and benefits. For example, cattle rustling imposes a cost on the original owner of the cattle and produces a benefit for the thief. However, sufficient prior evidence demonstrates that the net effect of conflict on the economy is negative and the net effect of peace is positive, such that it is meaningful to explore the costs of conflict and the benefits of peace at the macro level.

as well as indirect economic costs. Because of its narrow scope, this study does not address the social costs of conflict such as lives lost, relationships broken, services disrupted, or trauma induced, nor does it address the ways that conflict may indirectly affect state and national economies, such as preventing children from going to school or enabling crime. These important topics warrant further research.

METHODS

To answer the first research question, researchers examined official Internally Generated Revenue (IGR) and Value Added Tax (VAT) data, obtained from the Central Bank of Nigeria, and created a synthetic model of a hypothetical counterfactual history in which no farmer-pastoralist violence had occurred. This hypothetical scenario, created using data from carefully selected predictor states that are not (or less) affected by farmer-pastoralist violence, was then compared to the actual economic performance in each study state.

The circular nature of conflict and poor economic performance leads to a potential mutually reinforcing, or endogenous, relationship. It is possible that Nigerian states experiencing farmer-pastoralist conflict had poor structural and economic conditions that may have fostered violence in the first place. To address these concerns, the statistical model makes use of 2-stage regression analysis and an instrumental variable designed to correct for this endogeneity and tease out the one-directional effect of violence on economic performance.

A comprehensive violence dataset was constructed using two sources, the UCDP Georeferenced Event Dataset (GED) and the Armed Conflict Location and Event Dataset (ACLED) for Nigeria for all available years. Mercy Corps staff then coded and culled individual violent incidents to include those involving only actors related to farmer-pastoralist conflict, ensuring that largely unrelated incidents such as insurgent activities were excluded. Events were organized beginning when farmer-pastoralist violence reached a given level of intensity (in this case, the first month in which fatalities exceeded 25).

Study State	Date of First Extreme Violence	Fatalities Inferred in First Incident
Benue	October 2001	182
Kaduna	May 1992	52
Nasarawa	June 2001	113
Plateau	April 2001	39*

* Denotes the beginning of a protracted period of violence. Source: ACLED and UCDP, calculations by the authors.

Researchers then performed an econometric analysis to determine the share of the predicted revenue losses, based on the hypothetical historical scenarios, attributable to farmer-pastoralist violent conflict event fatalities.

To answer the second and third research questions, the study measured the potential national economic impacts of peace between farmers and pastoralists by extrapolating the household consumption and production data gathered from a survey of randomly selected households conducted by Mercy Corps. To do this, researchers modeled how the Nigerian economy would perform given heightened consumer spending and agricultural and livestock production, as a function of a “peace dividend.”²

² The following results only represent a fraction of Nigeria’s possible peace dividend because violent conflict between farmers and pastoralists in these four Middle Belt states only accounts for one type of breakdown in peacefulness.

Input-Output (I-O) analysis, a common economic analysis technique, was used to estimate the effects on the economy of a certain change in supply or demand within a particular industry.³ I-O tables, which researchers constructed using the 2010 Nigerian Supply-Use Table, contain static summary information of the industry-wise structure of an economy for a given period.⁴ In this study, researchers separated the data into 46 basic industry types.⁵

FINDINGS

Economic Costs of Farmer-Pastoralist Conflict to State Government Revenues

States experienced varying losses in IGR due to farmer-pastoralist conflict, largely corresponding with intense bouts of violence over a sustained period of time. Plateau state is predicted to have lost a greater share of its hypothetical IGR than the other states, between 51% and 75% of potential revenue. At the lower end, Benue is predicted to have lost between 0% and 44% of potential revenues due to farmer-pastoralist conflict. Predicted IGR losses seem to occur during or just following a particularly violent year, particularly in Benue and Plateau, as expected. See table below.

State	Cut Point	Total IGR Lost	Predicted Effect (Avg. Estimate)	Predicted Effect (Conservative)
Benue	2001–02	61,839	-47,704	0
			-44%	0%
Kaduna	1992–93	227,448	-64,955	-29,570
			-22%	-12%
Nasarawa	2000–01	34,366	-27,746	-6,180
			-45%	-15%
Plateau	2000–01	70,109	-207,051	-73,543
			-75%	-51%
Total		393,761.21	-347,456	-109,294
			-47%	-22%
As Percentage of Synthetic Predictions			96%	90%

Absolute and percentage-wise IGR losses from the cut point to 2012, modified to take endogeneity into account. Estimates in thousands of 2010 Naira

In total, the four study states of Benue, Kaduna, Nasarawa, and Plateau are estimated to have lost between NGN 109 million and NGN 347 million in IGR due to the conflict - roughly \$719,000 to \$2.3 million in 2010 USD, or 22-47% of their potential IGR collection.

3 Leontief (1936)

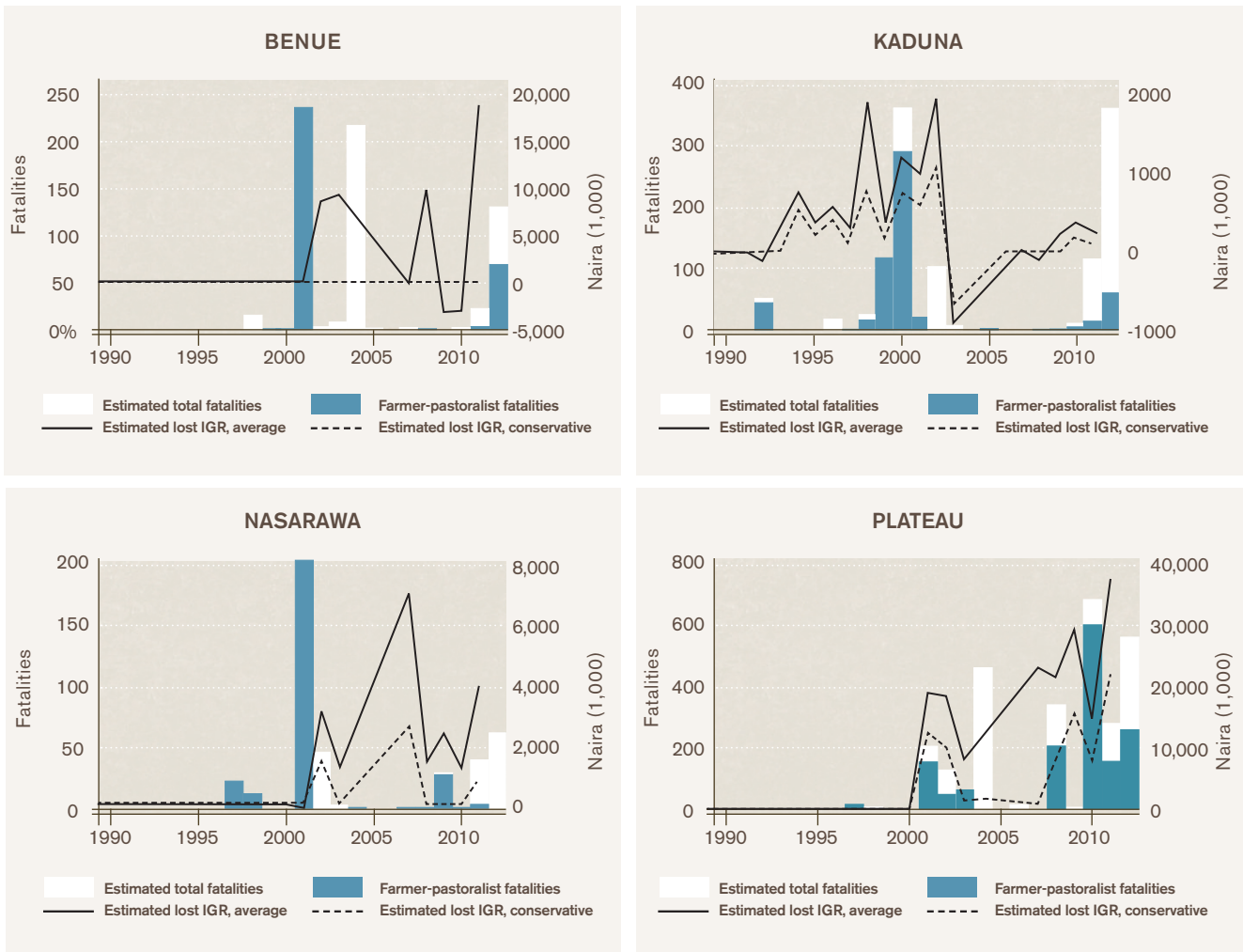
4 Kula (2008)

5 These combined methods to address three different research questions, relying on a combination of primary and secondary data, are described in more detail in the full Mercy Corps report, available upon request.

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Furthermore, average loss estimates suggest that for every fatality attributable to farmer-pastoralist conflict, the state government stands to lose NGN 162,000 in 2010 Naira (roughly \$1,065 in 2010 USD) the following year. Conservatively, each farmer-pastoralist conflict fatality costs the state NGN 48,730 in 2010 Naira (roughly \$320 in 2010 USD). It must be re-emphasized that these figures relate only to state IGR and do not seek to approximate the total economic loss associated with a death, including loss of income to a household.

CHART 1. Estimated fatalities and synthetically predicted IGR losses in each study state by year, 1990-2012



Potential Economic Benefits of Farmer-Pastoralist Peace to Total Nigerian Economy

The Input-Output (I-O) analysis yielded both direct and total (direct, indirect, and induced) macroeconomic gains to the Nigerian economy in a hypothetical scenario of peace between farmers and pastoralists. The potential benefits of peace were broken out into three categories: (a) direct, (b) indirect, and (c) induced. The direct impact includes the jobs, wages, and output of the increased economic activity. The indirect impact includes the jobs, wages, and output deriving from the production of intermediate goods serving as inputs to the sector in question. The induced benefits from the change in demand or supply are those ripple effects caused by the first two. I-O analysis deems the benefits of increases in the supply of a good to be a function of “forward linkages,” while the benefits of increases in the demand of a good are a function of “backward linkages.”

Linkage Types		Macroeconomic Losses		National GDP 2013 (1,000's Naira)	Gains as %-age of GDP	Gains as %-age of Total Economy*
		Amount in 1,000s Naira	Amount in 1,000s USD			
Backward Linkages	Direct	70,162,404	427,289	81,009,964,600	0.09%	0.02%
	Total	353,966,044	2,155,653	81,009,964,600	0.44%	0.13%
Forward Linkages	Direct	286,814,612	1,746,701	81,009,964,600	0.35%	0.10%
	Total	1,902,917,447	11,588,767	81,009,964,600	2.35%	0.68%
All Linkages	Direct	356,977,016	2,173,990	81,009,964,600	0.44%	0.13%
	Total	2,256,883,491	13,744,420	81,009,964,600	2.79%	0.80%

*Assumes Ogbuabor and Malaolu (2013) estimate of the informal economy as 71.18% of the total.

The maximum attributable benefit of peace to the Nigerian economy totals over US\$13.7 billion annually; these gains represent a sizeable share of the Nigerian Gross Domestic Product – up to 2.79%, if using the officially reported GDP. This toll is much smaller percentage-wise—0.8%—but still substantial, if it encompasses the “total economic product” of Nigeria, including the informal economy, which is estimated to be 3.5 times the size of official GDP.⁶

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Economic Costs of Farmer-Pastoralist Conflict and Potential Benefits of Peace by Sector

Most communities affected by farmer-pastoralist conflict in the Middle Belt engage primarily in the livelihood activities of crop farming, livestock rearing, trading, or some combination thereof. Constraints to these livelihood activities extend beyond communities directly affected by conflict: they impact the Nigerian economy as a whole, as the states of Benue, Kaduna, Nasarawa, and Plateau are central to the country's food production. Increased peacefulness would thus produce benefits for the Nigerian economy at large.

6 Ogbuabor and Malaolu (2013)

To calculate the benefits of peace, researchers took data from a Mercy Corps survey of randomly selected households where respondents estimated their economic losses due to farmer-pastoralist conflict, and multiplied population-wide income gains by the proportion of income spent and by the expected change in each industry's activity to estimate linkages associated with each sector and total expected change.

Estimated income losses in all study states due to farmer-pastoralist violence. All amounts are in 1,000s of Naira.

State	Projected Income Decrease in Sectors Due to Conflict			Total	Percentage
	Crop-farming	Animal rearing	Trading/Other		
Benue	237,827,874	70,253,030	54,529,043	362,609,947	24%
Kaduna	231,752,901	119,446,304	50,415,695	401,614,900	27%
Nasarawa	77,308,368	52,274,046	24,045,341	153,627,754	10%
Plateau	359,776,445	146,966,324	86,053,433	592,796,202	39%
Total	906,665,588	388,939,704	215,043,511	1,510,648,803	100%
Percentage	60%	26%	14%	100%	

Although an estimated 60 percent of the total income losses accrue to the crop-farming sector, this does not mean individual farming households stand to gain twice as much as pastoralist households in a scenario of peace. Rather, it is likely that the population of farming households is greater than that of pastoralist households, resulting in the farming sector incurring a greater share of total losses.⁷ Furthermore, many pastoralist households also engage in farming to supplement their income, and so these losses are spread across multiple types of households.

The industries with the most to gain from farmer-pastoralist peace as measured by *direct* losses are crop production, food and beverage, and livestock. The industries that would gain the most as measured by *total* losses are crop production, livestock, and trade. Total losses include direct losses as well as indirect – the reduced economic activity in sectors that serve as inputs to each industry – and induced losses – the multiplier effect of the first two.

In addition to the agriculture, livestock, and trade sectors, other industries that stand to benefit most from sustained peace include food and beverage industries, wage-earners⁸, chemical products manufacturing, petroleum products industries, manufacturing, financial services, and textiles. Finding that there would be growth in the value of the labor market (wage-earners) indicates that either the supply of labor or the value of wages, or both, are being depressed by farmer-pastoralist conflict. That significant gains would be made in industries that conflict-affected households are likely to have minimal direct participation in, such as financial services, indicates the far-reaching effects of farmer-pastoralist conflict on the Nigerian economy.

⁷ Furthermore, a survey sampling weight applied to the household survey accounts for relative populations of farmers and pastoralists, alleviating any bias that would result from surveying a greater number of farming households. However, the sampling weight is derived from imperfect relative population estimates at the cluster level. Better population data, disaggregated by livelihood and adequately accounting for nomadic and semi-nomadic households, would make the estimates more precise. These data were not available.

⁸ Wage-earners appear as an industry here because backward linkages were calculated in a "closed" matrix, including wages as inputs and household consumption as outputs.

RECOMMENDATIONS

The above findings provide facts and figures to what is widely known: conflict impacts local and national economies in deep, devastating ways. As Nigeria's security challenges loom in other regions, the ongoing violence in the Middle Belt must be addressed through smart policies and a commitment to long-term solutions. Select leaders in government, business, and civil society have agreed through a series of consultations that in order to realize the economic benefits of peace, the Nigerian government should take action in the areas below.⁹ These represent only a few priorities of the available policy solutions that will contribute to peace in the Middle Belt:

Establish and Fund Grazing Reserves and Stock Routes

Although the Grazing Reserve Law of 1965 provided for the establishment and management of grazing reserves, few such lands have actually been acquired and marked. As a result, farmers have encroached on land once designated for grazing, and pastoralists wishing to settle have limited legal options.

- The National Assembly should review and pass the bill currently under consideration that seeks to create a National Grazing Reserve Establishment and Development Commission. This Commission will work with states to review existing reserves, assess priorities for establishing new reserves, and provide infrastructure and services for all reserves.
- To strengthen enforcement of existing laws, state governments should raise public awareness about existing grazing reserves and stock routes, as well as land use regulations.

Strengthen Conflict Management Mechanisms

Few dispute resolution mechanisms or reconciliation processes are considered effective or truly representative across farmer and pastoralist communities.

- State governments should establish or strengthen representative conflict management committees that include traditional, religious, youth, and women leaders; civil society and human rights representatives; security officials; and government leaders.
- State and national governments should support the establishment of community-sanctioned, formalized alternative dispute resolution mechanisms.



Improve Security and Justice Systems

Security agents often lack the resources to respond adequately to conflict, and deep mistrust—caused by security agencies' impunity, inability to respond, or biases—between communities and officials hampers an effective response.

- States should strengthen existing joint task forces, including military, police, government, and judicial actors, responsible for passing recommendations to the national level, communicating key initiatives to the public, and liaising with community leaders.

⁹ Since February 2015, Mercy Corps has facilitated seven policy forums at state and national levels, where we have shared the research findings, involving more than 150 Nigerian leaders in business, civil society, government, policy, media, and security. The recommendations herewith are the product of these forums, and we are indebted to these leaders for their contributions.

- The police command should deploy more resources, including personnel, communications equipment, and logistics support, to hotspots for farmer-pastoralist conflict and should train personnel on conflict sensitivity and human rights.

Support Agricultural and Livestock Production

By relying on traditional methods, farmers and pastoralists are missing opportunities for increased productivity of land and herds. Furthermore, the lack of a proper herd tracking system allows for widespread cattle rustling, which exacerbates farmer-pastoralist conflict.

- State Ministries of Agriculture should increase funding for livestock and veterinarian extension workers who can support the health of herds, and for farming extension workers who can provide on-site training in modern farming techniques.
- The federal and state Ministries of Agriculture should enact a comprehensive plan to track livestock at state and local levels and regulate the sale and slaughter of all cattle in the country.
- The federal and state governments should support livelihood restoration for farmer and pastoralist communities devastated by violent conflicts. Integrated interventions may include joint economic initiatives across conflict lines, youth capacity development, and financing and investments in soil and pasture rehabilitation.

Through coordination among government, business, community, and civil society actors, Nigerians can begin to reverse the enormous costs of farmer-pastoralist conflict and enjoy the economic growth that will come with sustained peace.

ABOUT MERCY CORPS

Mercy Corps is a leading global humanitarian agency saving and improving lives in the world's toughest places.

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45 SW Ankeny Street
Portland, Oregon 97204

888.842.0842
mercycorps.org



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CONTACT

LISA INKS

Director of Conflict Management Programs, Nigeria
links@ng.mercy Corps.org

IVETA OUVRY

Country Director, Nigeria
iouvry@ng.mercy Corps.org