

Political Repression, Authoritarian Governance, and Agricultural Performance: Evidence from Ethiopia

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Received: April 16, 2026 | Review began: May 04, 2026 | Review ended: July 02, 2026 | Published: July 14, 2026

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Abstract

This study examines the impact of political repression and authoritarian agricultural policies on cereal crop yields across three historical and modern regime periods in Ethiopia, spanning five decades: the military-socialist Derg (1974-1991), the Ethiopian People's Revolutionary Democratic Front (EPRDF) (1992-2018), and the Prosperity Party (PP) (2018-present). Country-level annual time-series data were compiled from multiple sources. Aggregated cereal yield data were collected from the Food and Agriculture Organization of the United Nations. Indicators of political repression were gathered from the Varieties of Democracy) dataset. Piecewise (known break) structural break model was utilized with Instrumental Variable Two-Stage Least Squares to analyze the data. The regression results reveal that severe political repression, such as state-sponsored torture and politically targeted killings, significantly lowered cereal yield. The findings show that the effects of political repression are more intense under the EPRDF and PP regimes, despite their explicit claims of pro-rural policies and large-scale agricultural programs. The effect of repression persists even after controlling for agricultural inputs and climate factors, underscoring the severity of the shock. As expected, fertilizer applications and machinery use are positively and significantly associated with cereal yield. Conversely, temperature is negatively and significantly correlated with cereal yield, accentuating the vulnerability of agriculture to climate change. Likewise, the findings demonstrate that land holding per person had a negative and significant effect on cereal yield. However, as expected, fertilizer use and mechanization are positively and significantly associated with cereal yield, highlighting the role of agricultural inputs in boosting productivity. The main epilogue of this study is that sustainable agricultural growth requires not only investment and policy reforms but also decoupling agricultural decisions from politics and shielding agricultural affairs from political interference.

Categories: Food security and sustainability, Rural management & development (trade, livelihoods)

Keywords: political repression, rural-biased model, agricultural policy, authoritarian, structural break

How to cite this article:

Lemessa S (July 14, 2026) Political Repression, Authoritarian Governance, and Agricultural Performance: Evidence from Ethiopia. *Cureus J. Agri. Food Sci* 2 : es44497-026-00163-z. DOI <https://doi.org/10.7759/s44497-026-00163-z>

Introduction

Authoritarian regimes often enact pro-rural policies to consolidate power rather than to promote genuine development [1-4]. In Ethiopia, authoritarians successively implemented overtly pro-farmer policies and programs such as land redistribution, Agricultural Development Led Industrializations (ADLI), Sustainable Development and Poverty Reduction Program (SDPRP), and National Agricultural Mechanization Strategy (NAMS). The policies and programs, however, functioned as tools of political control. For example, the military-socialist Derg regime (1974-1991) proclaimed sweeping land re-distribution policy in 1975. However, peasants were granted no secure titles. Despite initial expectations, farmers fail to gain high yields with productivity oscillating around 1500 kilograms per hectare (kg/ha) [5]. Under this system, small holder farmers were forced to sell grain at fixed below-market prices, a policy that alienated the peasants and did nothing to stimulate production [5]. Likewise, the subsequent Ethiopian People's Revolutionary Democratic Front (EPRDF) regime (1992-2018) distributed subsidized fertilizer, improved seeds, and allocated credit selectively to party affiliated farmers. Human Rights Watch (HRW) documented that every tool at the regime's disposal, fertilizer, loans, and safety net programs, were being used to crush the opposition. Local officials routinely excluded those farmers deemed unsupportive of the ruling party from all support programs [6].

This pattern continued under the current Prosperity Party regime (PP), (2018-present), even as Ethiopia proclaim expanded rural investment. In effect, ostensibly, pro-farmer reforms became mechanisms of surveillance and extraction. One key reason for regimes target agriculture is its centrality to rural politics. For example, studies of African agrarian economies show that authoritarian and ruling-party governments impose politicized input controls and credit schemes on peasants [7,8]. In practice, then, agricultural policies under authoritarian rule functioned more as an instrument of repression and to draw the bargaining power in the rural community than genuine development [9,10].

Authoritarians focus on agriculture also stems from its importance for regime survival and durability [11]. Thomson (2019) and Albertus [4] encapsulate the logic by arguing that authoritarians enact policies mostly to create a relationship of perpetual dependence. Therefore, agricultural policy reform becomes a means of entangling rural workers in the tentacles of authoritarian influence rather than raising productivity.

Although regimes target rural populace as a key constituency, classical studies primarily emphasize urban areas. The argument is that regimes are biased toward cities due to fear that urban elites can organize violent riots, strikes, and other forms of resistance [12]. Orthodox view, therefore, argued that resistance to authoritarian power predominantly emerges in urban settings [12]. For instance, Legesse and Shumetie [13] assert that to maintain power, authoritarians easily imperiled by urban populations and ever fearful of food-riots, have been forced to implement policies that placate urban consumers but detrimental to the rural population. Similarly, Bates [1] and Thomson [11] posit that autocrats appease city dwellers and workers by keeping prices low, and implicitly taxing farmers as they fear urban strikes, riots, and demonstrations.

However, in heavily agrarian states like Ethiopia, this logic can invert into a Rural-Biased (RB) model, whereby the political economy is largely anchored in the rural economy. In this case, the regime's survival and durability hinges on the rural populations as a source of military personnel, tax revenues, and political bases. Though regimes justify such interventions as pro-agrarian development, the policies are perverse, politically motivated, and repressive in nature. Because agricultural policies under authoritarian rule are subverted for power consolidation and coercive control, they create perverse economic distortions that dampen productivity and lead to food insecurity. The outcome of such a policy is Failed-Rural Bias (FRB), which frequently entrenches peasant dependence on the state, suppresses incomes, damps investment, and results in persistent underdevelopment and chronic food insecurity [14,15].

This paper examines the impact of systemic political factors and agricultural policies on cereal crop yields across historical and modern timelines in Ethiopia. In Ethiopian context, once instituted, agricultural policies and programs become subsumed under political imperative, hindering implications and rendering the policies ineffective. For example, the Derg regime used the land nationalization not to empower peasants, but to dismantle the feudal power base and replace it with state-led Peasant Associations (PAs) [16,17]. These associations acted as the panoptic surveillance

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apparatus of the regime in the periphery, enforcing military-socialist commands and grain quotas through the Agricultural Marketing Corporation (AMC) [10]. The DERG revolutionary changes institutionalized state ownership of the means of production, effectively turning the peasantry into a captured labor force under a military-socialist [18]

Similar to the Derg, the EPRDF regime coined its own version of the "developmental state" to control the economy and monitor the peasants in the name of development [19]. The regime redistributes land to commercial farming under coercion, extension services, and subsidies for those tethered to party loyalty. Input markets are also monopolized by ruling-party cronies [19]. While framed as a market-oriented path to productivity, the ADLI policy of the EPRDF served to consolidate state authority and to have the regime penetrate every household via Development Agents (DAs) and Model Farmers (MFs) [20]. These actors functioned as political cadres who weaponized access to fertilizers and credits, making party loyalty a prerequisite for survival. The regime also implemented a group of five farmers commonly known as Tokko-Shane (T-Sh) surveillance system to further atomize rural society, branding anyone outside the group as opposition and anti-development and justifying arbitrary land confiscations and mass displacement often under the pretext of large-scale investment [21,22]. Resources are poured into nominally pro-poor subsidies and extension schemes, but in ways that explicitly rewarded partisan MFs while punishing dissenters [23].

The PP regime retained many of the EPRDF-era developmental state policies and rebrand to "Prosperity Model" (PM) under the Homegrown Economy (HE) narrative [24-26]. More coercive security dimensions were introduced including the secretive security committee known as the Koree Nageenyaa (KN) or Yedehinet Komite [27] under the guise of prosperity rhetoric. The previous surveillance networks have been rebranded into the Ijaarsa Olla (IO) system, which now integrates agricultural participation with mandatory militia training known as Gaachana Sirnaa (GS) (shield of the system) to defend the regime against insurgency [28]. More recent reports reveal that a gang group locally named as 120-groups, allegedly introduced by government actors, operates alongside specialized units commonly referred to as Garee Bakakka [29]. These groups are described as exerting coercive control over rural communities by intimidating farmers, extorting ransom payments, and enforcing forced conscription. Individuals who resist, question their authority, or refuse to comply are reportedly subjected to severe punishment, including lethal violence [30]. Farming activities are frequently disrupted by forced prosperity indoctrination and mass mobilization known as kitat for civil war, which has led to a dramatic decline in food security [31]. Farmers are mandated to replace existing farming with wheat production through cluster farming systems, often against their choices. The cluster farming has become a powerful tool to extend the government grip on rural communities and monitor outputs. Those who refuse to take part in the cluster farming or wheat revolution propaganda are at risk of losing access to land, arrest, detention in unofficial centers, or extrajudicial killing. This campaign has little to do with increasing wheat production but was meant to impose control over the rural communities and keep dissents in check. The fact that the country allocates only 3% of the national budget against the Comprehensive Africa Agriculture Development Program (CAADP) recommendation of 10% while the sector employs over 73% of the national work force speaks to the real intension of the massive cluster farming propaganda. Through slashing agricultural budget to fund defense [32], the regime continues a 50-year legacy in which agricultural reform is merely a tactical façade for its grip on the rural populace [33].

Existing debates on policy bias have generally overlooked this politically motivated distortive and repressive authoritarian logic. Many scholars believe that removing distortive policies and anti-agricultural bias is the solution [34-35] emphasizing that even well-intentioned rural policies can fail when rooted in authoritarian logic. While some autocrats use non-coercive tools [36], evidence suggest that Ethiopia's rulers combined both policy manipulation and violence to control farmers [37-39]. This article argues that effective and genuine agricultural support could improve productivity if implemented properly.

Moreover, Ethiopia's rulers timed agrarian reforms to maximize political support, especially during elections [40]. High-profile campaigns such as accelerated extension rollouts or land certification programs often coincide with electoral cycles, as the government seeks to reward rural constituencies en masse. A large body of past research examines farm-level specific factors that affect agricultural outcomes, including low technological adoption, limited innovation, low levels of smallholder education, climate change impacts, and extension inefficiencies. While farm-level factors affect

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agricultural yield, there is a notable gap in how macro-level policies and political repression shape agricultural outcomes. By comparing Ethiopia's three successive historical and modern regimes, this study aims to examine the effects of macro-level policies and systemic political factors on agricultural performance, specifically cereal crop yields.

By addressing gaps in the literature and given the objective, this study aims to make threefold contributions. First, the study contributes to theoretical literature by developing a new conceptual framework, called RB, and by the orthodox UB economic views of authoritarian ambitions in the agricultural sector. Second, by providing new empirical evidence, this study shifts the paradigm, contrasting the notion that rural farmers are inherently the problem when the reality that distortive policies and political repression are the predominant factors affecting agricultural performance. Third, by shifting the analysis from micro-farm level to macro-systemic policy factors and levels of political repression, the study contributes to debates in development and agricultural economics about how political repression shapes growth in the periphery.

Conceptual framework: the RB model

We propose the RB concept that challenges the classic economic view of the urban-bias (UB) model. The orthodox UB policy views farmers as neglected because authorities are too busy appeasing volatile city populations. Numerous studies in the past documented that pro-rural policies often fail farmers due to distortions. Price support programs, credit, or land reforms may appear pro-agriculture on paper, but in authoritarian contexts, they are implemented coercively. In line with this, Holz [41] explained that UB policy is a means of an inefficient and systemic bias against agriculture, with governments funneling resources, such as subsidies, to cities at the expense of rural producers.

Under the RB scenario, however, the regime's ostensible goal of boosting production is eclipsed by political goals that impact both rural and urban residents. With peasant production squeezed into state channels, urban food supply tightens and market prices rise. Contrary to the classical political economy, as in Bates [1] and Thomson [11], which postulates that authoritarians favor urban residents and enact distinctly anti-rural policies to prevent riots, strikes, and revolutions organized by city elites, agrarian authoritarians often face greater existential threats from the countryside. In Ethiopia, regimes have faced significant resistance, including armed rebels from the peripheries, not the center.

The RB concept, specifically, is an inverted classical UB model developed by Thomson [11]. It argues that in an agrarian economy, controlling rural constituents plays a paramount role for the survival of the authoritarian state. Instead of favoring cities, the regime dictates agricultural policy to deepen rural dependency, secure compliance, preempt deadly rural uprisings, and execute surveillance often at the expense of genuine agricultural development. However, these pro-rural policies are camouflaged by political surveillance.

In the RB structure, therefore, regimes occupy the central position in determining and shaping socio-political and economic phenomena, with political survival and the consolidation of state authority as their overriding objectives. Accordingly, regimes enact policies that embed instruments of control through pricing systems, marketing regulations, credit allocations, and land redistributions, designed to mitigate the risk of rural dissent and maintain political stability. By contrast, urban constituencies tend to receive less explicit policy support, including higher prices, reflecting a strategic calculus in which the rural population serves as the primary political base. This perspective departs from models such as Thomson [11], which conceptualize urban centers as the principal loci of unrest; instead, it posits rural contention as the binding constraint on regime survival and the central focus of state coercive and distributive strategies.

Moreover, the RB framework stresses that seemingly pro-rural policies fail to deliver. Because reforms are guided by political motives, they are implemented in distorted ways. For instance, state cooperatives may forcibly buy crops at fixed prices below market, leaving farmers with lower incomes. Capital and inputs might flow to large, mechanized farms or party-affiliated projects, not to ordinary peasants.

Mechanisms and micro-processes of repression in Ethiopian agricultural is conceptualized in Figure 1 and Table 1. In the conceptualized diagram, regime is placed at the top corner, exerting policy shown by arrows pointing toward both rural and urban populations. A strong arrow from the regime points to the rural, labeled as high interest reflects regime's intense focus on controlling peasants as also argued by Puddu [42]. A weaker or variable arrow points to the urban

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exhibits that urban policy interest is secondary or context dependent, marked as unknown. Arrows from regime policy bend down toward both groups indicate that both face coercive state intervention. At the bottom, the outcomes of policy are shown. For the rural, the outcomes are reduced production, marginalization, hunger, poverty, while for urban residents the outcomes are high food prices, food insecurity.

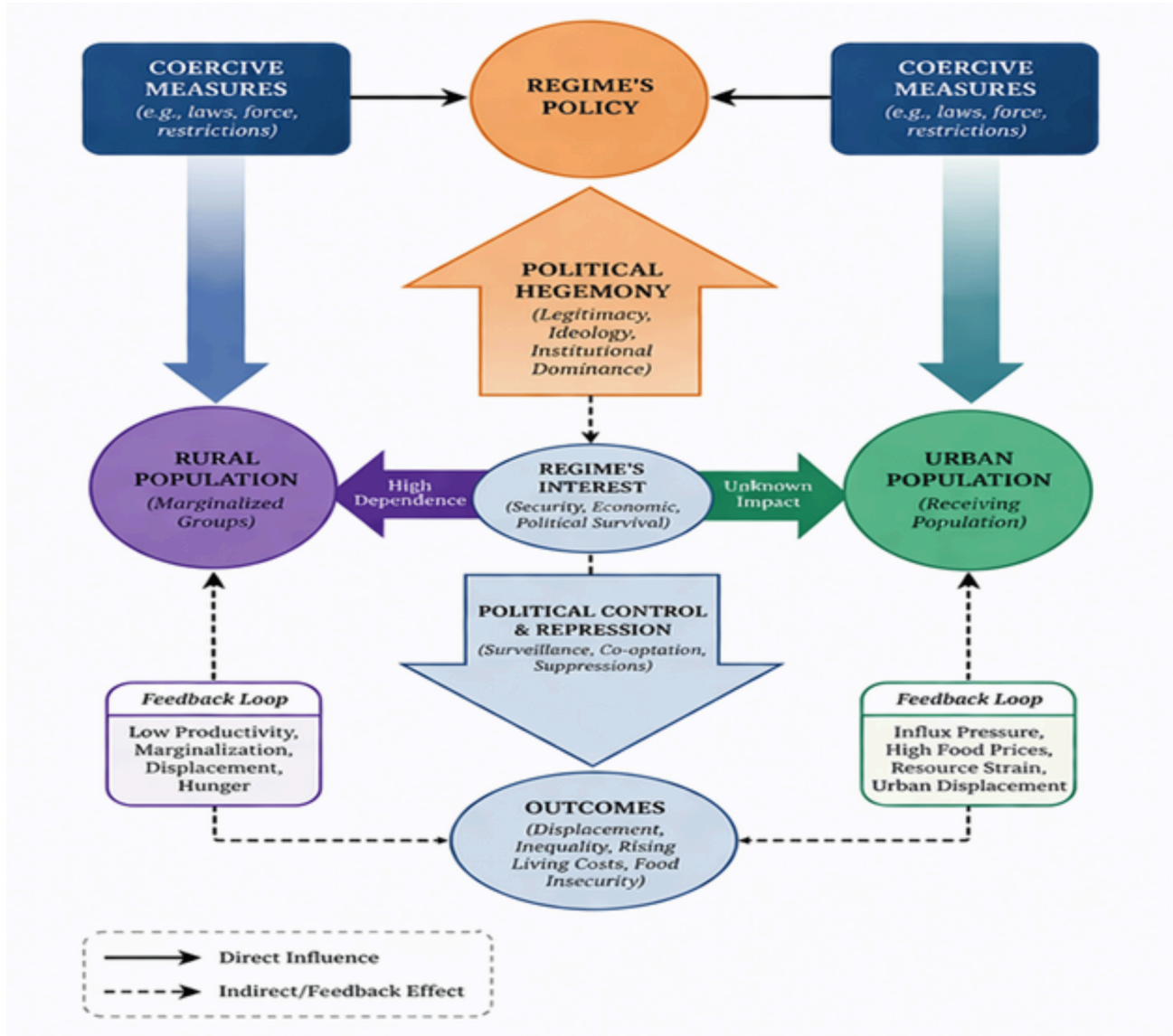


FIGURE 1: Conceptual representation of the rural-biased framework.

Source: Author's Conceptualized Framework.

Dimension	Derg	EPRDF	PP
Development ideology	Marxist-Leninist command economy; land to the tiller under state ownership [43]	Developmental state anchored in ADLI [44]	PM under HE reform; hybrid model combining market liberalization with securitized governance [45]
Primary political objective	Consolidation of revolutionary authority; dismantling feudal structures.	Regime durability via rural control.	Regime stabilization, survival and consolidation of state authority [45].
Core rural control units	PAs and producer cooperatives (PCs) as administrative and surveillance nodes.	DAs, 1-to-5 networks, and MFs [46].	Garee Bakakka, GS structures, IO structure, militia-linked local networks, 120-group (Addis Standard,2026).
Mechanism of state penetration	Direct administrative control over land, labor mobilization, and redistribution.	Control through extension services (ES), social networks (SN), and performance-based targeting.	Blended civil-security apparatus integrating development programs with local security enforcement.
Enforcement apparatus	Party cadres, military officials, and revolutionary tribunals.	DAs, local party operatives, and socially embedded monitoring networks.	Local militias, party operatives, and security-linked community structures.
Policy instruments	AMC monopsony; quota-based procurement; price controls [47]	Input subsidies, extension services, and selective access to credit and markets conditioned on compliance.	Conditional access to inputs, credit, and markets increasingly tied to political alignment and local security dynamics.
Incentive structure for farmers	Coercive extraction; limited price incentives; weak property rights.	Mixed incentives: EPRDF-affiliated MFs get the incentives, and political compliance is embedded in access mechanisms. Other farmers are labeled as follower farmers (FFs) and denigrate their efforts, slurring them by calling them those who sell their crops quickly for alcohol consumption instead of saving for future use.	Heightened uncertainty. Incentives are contingent on security considerations, distributed to party-allied farmers, and granted to those who implement the regime's wheat production rhetoric, complete denial for those who refuse to implement regime propaganda, and labeling them as supporters of the rebels.

How to cite this article:

Lemessa S (July 14, 2026) Political Repression, Authoritarian Governance, and Agricultural Performance: Evidence from Ethiopia. *Cureus J. Agri. Food Sci 2* : es44497-026-00163-z. DOI <https://doi.org/10.7759/s44497-026-00163-z>

Implications for agricultural outcomes	Disincentivized production; low yields; recurrent food insecurity.	Moderate productivity gains with regional heterogeneity; persistent structural constraints [48,49].	Uneven outcomes: localized gains offset by instability, disrupted markets, and declining institutional coherence.
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TABLE 1: Comparative political economy of rural control and agricultural policy in Ethiopia.
EPRDF, Ethiopian People’s Revolutionary Democratic Front; PP, Prosperity Party; ADLI, Agricultural Development Led Industrializations; PA, Peasant Associations; DA, Development Association; AMC, Agricultural Marketing Corporation; MF, Model Farmer

Materials And Methods

Data sources and coverage

This study used secondary data compiled from multiple sources. The analysis period covers 1974 to 2024 and three distinct political regimes, namely: Derg, EPRDF, and PP. Aggregate cereal yield data were collected from the Food and Agriculture Organization (FAO) of the United Nations (UN), and WB’s World Development Indicators (WDI) dataset. The data on cereal yield includes all crop types, mostly used as staple foods. However, crops harvested for hay or green for food, feed, or silage, and those used for grazing are excluded. These sources are widely used in empirical development, and agricultural economics due mainly to their methodological consistency, cross-country comparability, and long temporal coverage. Political repression related data such as state-sponsored torture and violence, political killings, and property confiscations are gathered from the Varieties of Democracy, commonly known as V-Dem dataset, version 14 [50]. V-Dem dataset provides annual, expert-coded measures of political institutions and state practices for over 200 countries from 1789 to the present and is increasingly regarded as the gold standard for institutional and political economy research [50, 51].

In addition, governance and accountability indicators such as liberal democracy, electoral competition, freedom of expression, rule of law, property rights protection, and expropriation risk were included into the repression indexes. These dimensions capture the broader institutional environment within which agricultural policies are designed and implemented.

A growing body of empirical literature demonstrates that repression and weak institutions negatively affect economic performance by distorting incentives, increasing uncertainty, and undermining trust between citizens and the state [52,53]. In the agricultural sector specifically, insecure property rights, arbitrary state intervention, and political violence reduce farmers’ willingness to invest in productivity-enhancing technologies and long-term land improvements [54-57].

Empirical strategy

The empirical strategy proceeds in two steps. First, to capture regime-specific heterogeneity and policy discontinuities, this study employs a combination of descriptive analysis and a piecewise (known-break) structural break model (SBM). Structural breaks are introduced at historically and institutionally meaningful points corresponding to regime transitions. This approach allows to estimate differential effects of repression and policy variables across regimes, rather than imposing a single, homogeneous relationship over the entire period.

The use of known structural breaks is well-established in political economy and macro-development research, particularly when regime changes are associated with sharp shifts in institutions and policy orientation [58,59]. Explicitly modeling these breaks avoids conflating regime-specific effects and provides a clearer assessment of how political repression and authoritarian agricultural policies evolve.

To ensure statistical rigor, the study conducts formal tests to validate the presence and significance of these changes. In contrast to Lu et al. [60], which adopted SBM and probabilistically estimated breakpoints, this study follows a more deterministic approach, specifying break dates a priori based on historical events, while still statistically testing their effects on the relationships between political repression, policy variables, and cereal yield.

Following Ngoben and Muchopa, and Ghosh [61,62], the baseline SBM estimation is specified as a linear time series model:

$$Y_t = \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \varepsilon_t$$

Where Y_t is the cereal yield kg/ha at time t , X_s are political repression and policy variables at time t , β_s is the coefficient for policy variables, and $\varepsilon_t \sim \text{i.i.d.}(0, \delta^2)$ is the error term.

To examine whether political repression and policy variables impact vary across the three political regimes, both intercepts and slopes are allowed to change at exogenously defined breakpoints, and the model is specified as follows:

$$Y_t = \begin{cases} \alpha_1 + \beta_{11}X_{1t} + \beta_{12}X_{2t} + \beta_{13}X_{3t} + \varepsilon_t, & \text{if } t \leq T_1 \\ \alpha_2 + \beta_{21}X_{1t} + \beta_{22}X_{2t} + \beta_{23}X_{3t} + \varepsilon_t, & \text{if } T_1 < t \leq T_2 \\ \alpha_3 + \beta_{31}X_{1t} + \beta_{32}X_{2t} + \beta_{33}X_{3t} + \varepsilon_t, & \text{if } t > T_2 \end{cases}$$

This specification allows us to test whether the effect of each variable on cereal yield differs significantly across regimes. Regime dummies are then defined as follows:

$$D_1 = \begin{cases} 1, & \text{if } t \leq T_1 \\ 0, & \text{otherwise} \end{cases}, \quad D_2 = \begin{cases} 1, & \text{if } T_1 < t \leq T_2 \\ 0, & \text{otherwise} \end{cases}, \quad D_3 = \begin{cases} 1, & \text{if } t > T_2 \\ 0, & \text{otherwise} \end{cases}$$

Then the model becomes:

$$Y_t = \sum_{i=1}^3 \left(\alpha_i D_i + \sum_{j=1}^K \beta_{ij} D_i X_{jt} \right) + \varepsilon_t$$

Where K is the number of explanatory variables included in the model.

Instrumental variable

To address potential endogeneity and reverse causality between political repression index and cereal yield, the study used an Instrumental Variable (IV) Two-Stage Least Squares (IV-2SLS) estimator. Higher yields might independently trigger more or less repression. In addition, episodes of political repression may themselves be reactive responses to climate-induced rural unrest and agricultural crises, creating simultaneity between repression and agricultural performance. The baseline model is respecified as follows.

$$Y_t = \sum_{i=1}^3 \left(\alpha_i D_i + \sum_{j=1}^K \beta_{ij} D_i X_{jt} + \gamma_i D_i \hat{R}_t \right) + \varepsilon_t$$

Where: Y_t is cereal yield (kg/Ha) at time t ; D_i is regime dummy variables; X_{jt} is exogenous policy and control variables; $\hat{R}_t$ is endogenous repression variable instrumented in the first stage; and γ_i is regime-specific repression effects.

In the IV-2SLS, the repression index is the endogenous variable. State torture and political killings serve as IVs for the endogenous multidimensional repression measure. In the first-stage regression, the dependent variable is regressed on the IVs to generate fitted values. In the second stage, the predicted value is included in the cereal yield equation. The first stage IV-2SLS estimation procedure is specified as follows.

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$$R_t = \pi_0 + \pi_1 Z_t + \sum_{i=1}^3 \pi_i D_i + \sum_{j=1}^K \theta_j X_{jt} + u_t$$

Where Z_t is IV correlated with repression but plausibly exogenous to cereal yield, and R_t is a repression index.

The second stage IV-2SLS, which includes the predicted value obtained in the first stage, is given in the following equation.

$$Y_t = \sum_{i=1}^3 \left(\alpha_i D_i + \sum_{j=1}^K \beta_{ij} D_i X_{jt} + \gamma_i D_i \hat{R}_t \right) + \varepsilon_t$$

Subsequently, before the SBM estimation, the study conducted unit root tests to assess data stationarity. Following the methodological approaches of Perron and Alesina et al. [58,59], the most widely adopted test, the Augmented Dickey-Fuller (ADF) test, is employed. The ADF test estimate is given in the following equation:

$$\Delta Y_t = \alpha + \beta_t t + \gamma Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-i} + \varepsilon_t$$

Where $\Delta Y_t = Y_t - Y_{t-1}$ is the first difference of the series, α is the coefficient (drift), β_t is the time trend, and $\varepsilon_t \sim \text{i.i.d.}(0, \delta^2)$ is the error term.

Finally, Chow test, a special case of the classical F-test, is employed to assess whether the relationships between variables significantly changed at the predetermined breakpoints. In this study, the test is applied to assess whether the relationships between cereal yield and political repression and policy-related variables differ significantly across regime periods. Under the null hypothesis of parameter stability, a pooled regression model is appropriate, whereas under the alternative hypothesis, separate regressions for each regime provide a better fit to the data.

Formally, the Chow test compares the residual sum of squares from the pooled model and the segmented models using an F-statistic derived from the standard F-test framework for nested models. Thus, the Chow test is a special case of the F-test where structural breaks are pre-specified rather than estimated endogenously. This interpretation follows the original formulation of [63,64] and standard econometric treatments of structural change and hypothesis testing in linear regression models [64,65].

The Chow test requires calculating the residual sum of squares (RSS) from three separate regressions. The formula for the statistic is given as follows:

$$F = \frac{\frac{RSS_P - (RSS_1 + RSS_2)}{k}}{\frac{RSS_1 + RSS_2}{n_1 + n_2 - 2k}}$$

Where RSS_P is the residual sum of squares from the pooled regression, RSS_1, RSS_2 are RSS from pre- and post-break regressions, k is the number of parameters (including intercept), and $n_1 + n_2$ is the number of observations before and after the break.

Results And Discussion

Tables 2 and Table 3 summarize cereal yield statistics across the three regimes. Cereal yields were minimal under the Derg regime, averaging 1,100kg/ha. It showed a rising trend under the EPRDF and PP regimes, with averages of 1,530kg/ha and 2,830kg/ha, respectively. Ethiopia lags many of its SSA peers, such as Uganda, Malawi, and Zambia, which have average cereal yields of 3,000 to 4,000kg/ha under comparable conditions. This finding is consistent with [66], who documented that productivity gains are low across successive Ethiopian regimes. According to Ayele [66], the low cereal productivity is attributed to inadequate investment in technology and distortive policy implementations.

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On the other hand, contrary to the 6.9% yield growth reported by the African Development Bank (AfDB) group for 2021/22 [67], the annual mean yield growth rate is stagnant at about 1.9%. In contrast, Bachewe et al. [68] cites government claims of 7.6% growth rates between 2004 and 2014.

The average arable land in hectare per person, a key indicator of land redistribution policies, declined from about 0.32 ha per person during the Derg to 0.16 and 0.14 ha per person under the EPRDF and PP regimes, respectively. The initial surge in land per person during the Derg is likely due to the immediate, radical land redistribution policy promised following the confiscation of land from landlords and its redistribution to the farming community [69]. However, later it was accompanied by coercive policy enforcement and political repression of the farming community.

The study's findings on Ethiopian agricultural policy variables show a significant, steady increase in aid dependency. Average annual aid inflows have increased significantly over time, from about \$344 million during the Derg to about \$2.4 billion and \$5.5 billion under the EPRDF and PP regimes, respectively. Despite the rising inflows, the effectiveness of these aids in boosting agricultural yields and its implementation remains a major challenge. The exact proportion of developmental aid specifically allocated to agriculture is also unclear and warrants further study.

Similarly, foreign economic engagement in the agricultural sector, proxied by Foreign Direct Investment (FDI) inflows, was as low as an average of \$1 (in million) during the Derg regime. Meanwhile, it rose to about 881.6 and 3,137 during the EPRDF and PP, respectively.

In contrast, agricultural export values were virtually non-existent during the Derg regime. Under the EPRDF, the average agricultural export value was about \$1.4 billion and is about \$1.88 billion under PP.

The results of machinery consumption showed an upward pattern over time. In the data, machinery refers to farm inventories of farm machinery measured in horsepower, including tractors, combine-threshers, and milking machines. The number of machinery units rose from an average of 49 during the Derg to 84 during the EPRDF and 109 during the PP, respectively. Even though the trend shows a rising pattern across the three regimes over time, machinery usage remains at its lowest level compared to other medium and SSA countries.

Fertilizer consumption (FRC), which includes total N, P₂O₅, K₂O nutrients from inorganic fertilizers and N from organic fertilizers applied to soils, was at the minimis during the Derg regime, averaging about 3.7 kg/ha. Analogously, during the EPRDF and PP, average fertilizer application is about 17.4 kg/ha and 34.9 kg/ha, respectively. Although there is significant increase in fertilizer consumption over years, fertilizer use in Ethiopia compared to many countries in SSA is minimal. This result, therefore, reveals that agricultural input consumption is still suboptimal in the Ethiopian agriculture.

Statistic	Derg	EPRDF	PP
Mean cereal yield (kg/Ha)	1,106.16	1,530.22	2,828.65
CAGR	2.93	2.54	1.93
Min-Max cereal yield	812-1,372	974-2,539	2,730-2,892

TABLE 2: Cereal yield summary statistics.

CAGR, Compound Annual Growth Rate (Percentage).

No.	Variable	Mean Derg	Mean EPRDF	Mean PP	Std.Err Derg	Std .Err EPRDF	Std.Err PP	P-value	
1	Arable land (Ha per person)	0.322	0.161	0.14	0.015639	0.002731	0.002188	0.001	
2	FRC (kg)	3.732	17.489	34.955	0.466218	1.50755	3.711324	0.001	
3	Arable land (Ha)	12,174,722	12,481,477	16,222,025	214,609.6	482697	30703.7	0.001	
4	Aid (USD)	344.155	2,423.45	5,504.31	71.15671	333.0076	296.7274	0.001	
5	Machinery (Horsepower)	49.09649	84.26267	109.0745	8.643502	1.91288	1.454303	0.003	
6	Production (kg)	5,259,548	13,767,758	29,722,163	204,208.8	1,417,020	491,541.7	0.034	
7	Area harvested (Ha)	4,814,631	8,237,496	10,691,808	72,075.51	426,011.2	214,938.6	0.001	
8	Credit (USD)	0	4,776.25	26,190.53	0	3,769.30	6,549.96	0.090	
9	Export value (USD)	0	1,403.65	1,880.25	0	743.639	61.01977	0.001	
10	Total FDI in flow (USD)	1	881.607	3,137.42	3.087	1,135	861.7	0.001	

TABLE 3: Descriptive statistics results.

EPRDF, Ethiopian People's Revolutionary Democratic Front; PP, Prosperity Party; FRC, Fertilizer Consumption; FDI, Foreign Direct Investment

Cereal yield distribution trends across regimes

Figure 2 and Figure 3 present a graphical illustration of cereal yield break trends across the three political regimes. The line graph in Figure 2 displays highly volatile trends of cereal yields over time. The result indicates that during the Derg regime, cereal yields followed a slow upward trend, punctuated by frequent instability. The overlap in yield distributions

How to cite this article:

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between the late EPRDF and early PP periods highlights a policy continuity, and the leadership transition didn't overhaul cereal yield trends.

Consistent with the line graph, the boxplot in Figure 3 shows that the distribution of cereal yields during the Derg regime was minimal and mostly concentrated between 800 and 1,350 kg/ha. Under the EPRDF and PP, cereal yields have increased, though inconsistently, compared to the Derg. The increases in cereal yield during the two regimes, however, are not due to policy improvements under the new regimes ; instead, they are the result of area harvest and adoption of better technologies. Figure 4 illustrates cereal yield vs. area-harvest distribution over time across regimes, and the results show upward trends in both. The area harvest graph lies above the yield graph during the EPRDF. The vertical distance between the two lines is greatest from the late 1990s to the 2010s, indicating that the expansion of harvested area drove gains in cereal yields.

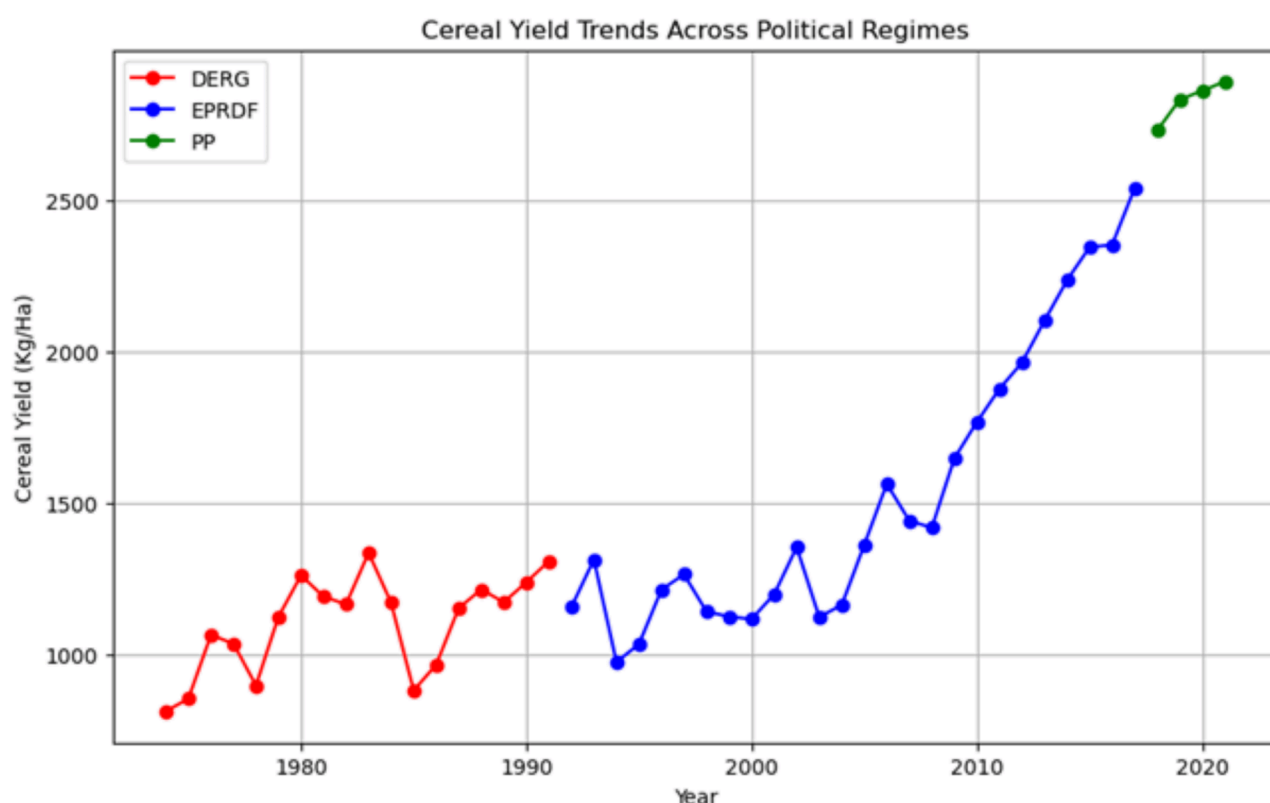


FIGURE 2: Cereal yield distribution trends across political regimes.

Source: Author's own computations based on FAO datasets.

FAO, Food and Agriculture Organization

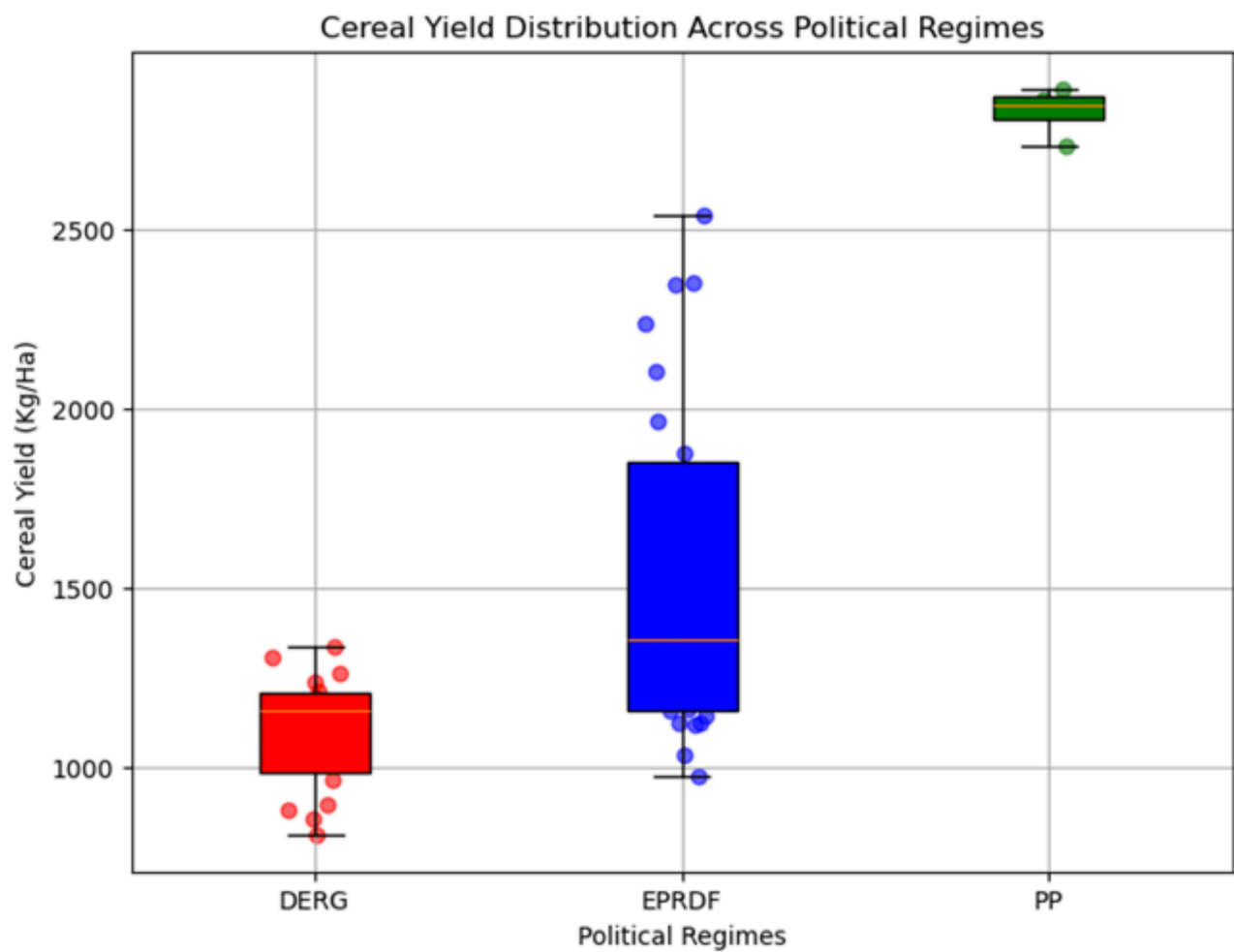


FIGURE 3: Box plot of cereal yield distribution across political regimes.

Source: Author's own computations based on FAO data.
EPRDF, Ethiopian People's Revolutionary Democratic Front; FAO, Food and Agriculture Organization

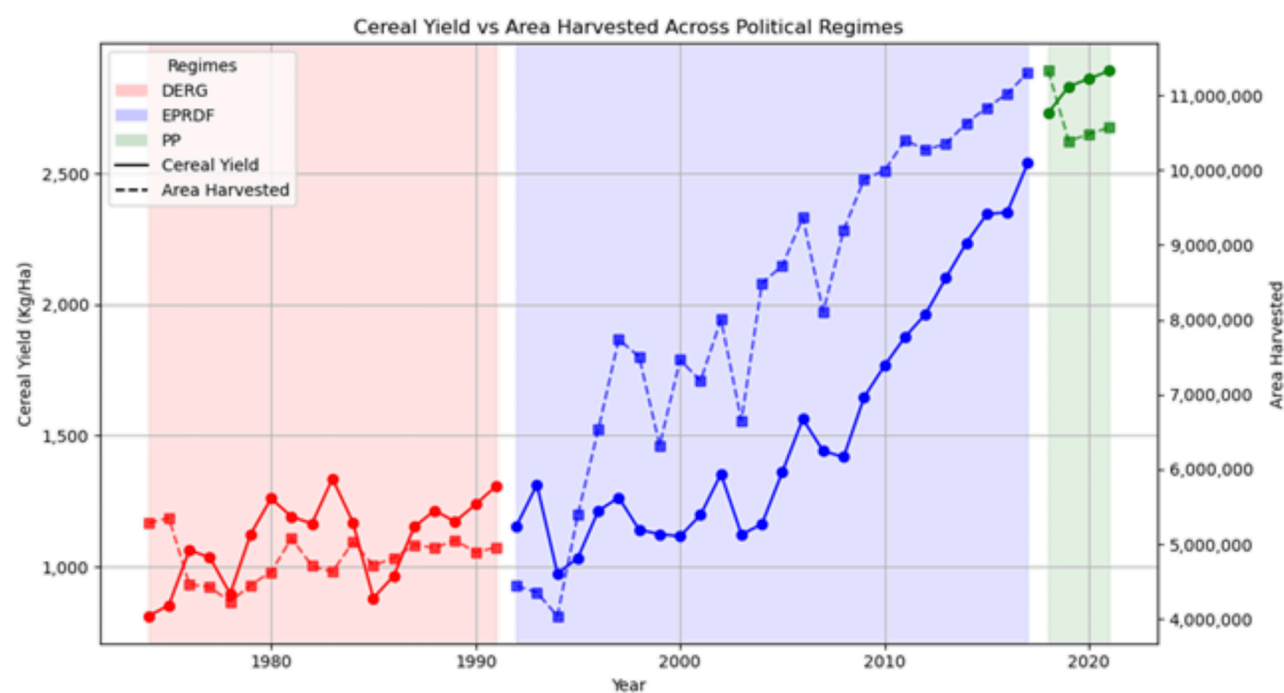


FIGURE 4: Cereal yield and area harvested across political regimes.

Source: Author's own computation based on FAO dataset.

EPRDF, Ethiopian People's Revolutionary Democratic Front; PP, Prosperity Party; FAO, Food and Agriculture Organization

Regime-specific effects of agricultural policy instruments

Figure 5 and Figure 6 present the marginal effects of key policy variables on cereal yields and the correlations between policy variables and cereal yields across the three regimes, respectively. During EPRDF and PP, machinery use displays a consistently positive correlation with cereal yields. During the Derg, the use of machinery negatively affected cereal yield. The negative marginal effects of machinery use during the Derg likely echo the forced collectivization and inefficient state control. Credit use shows strong regime dependence, with positive marginal effects emerging only during the EPRDF. Aid demonstrates diminishing effects over time. The results of such patterns prompt a structural break regression analysis that captures regime heterogeneity.

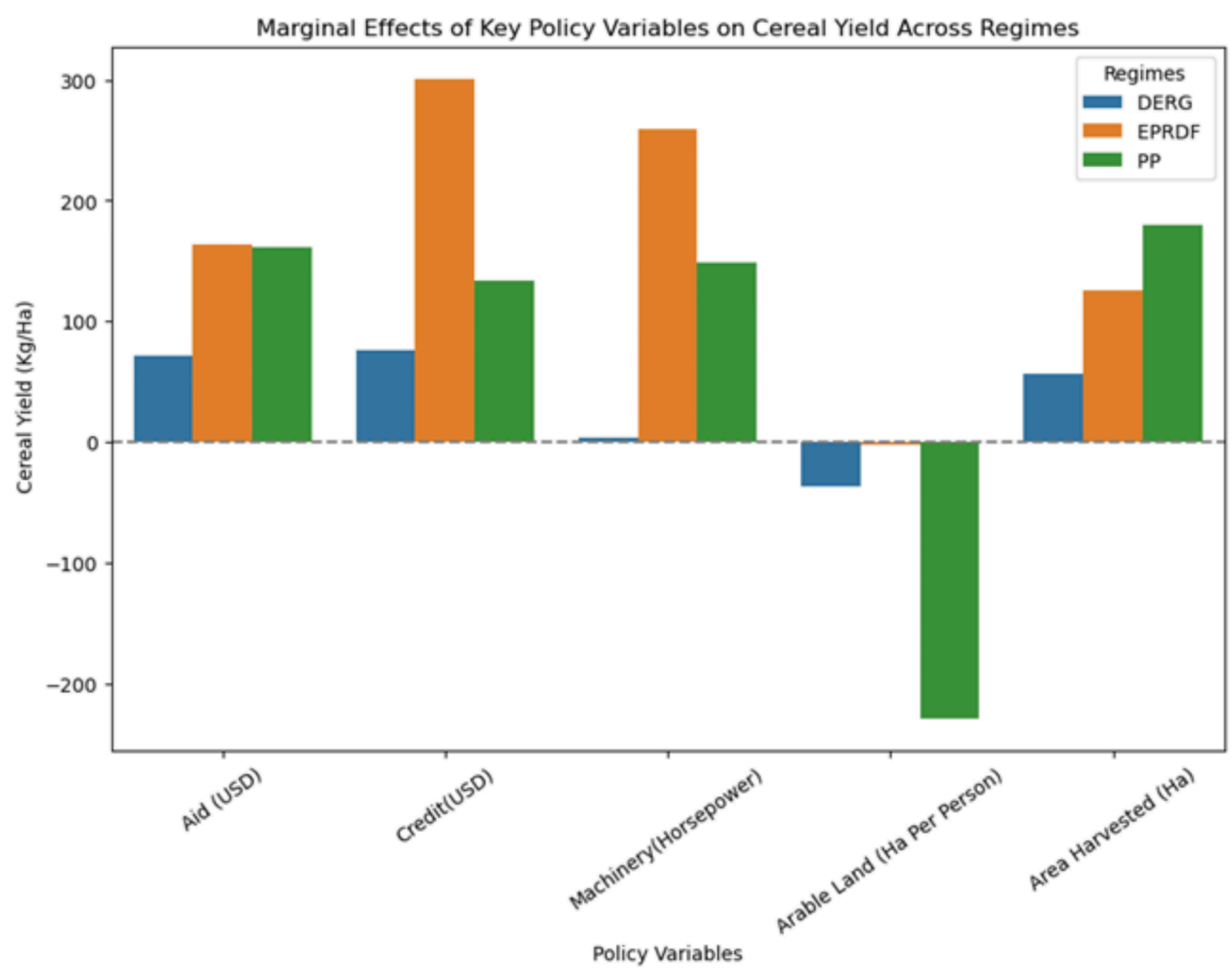


FIGURE 5: Marginal Effects of Policy Variables on Cereal Yield

Source: Author's own computation using FAO dataset.

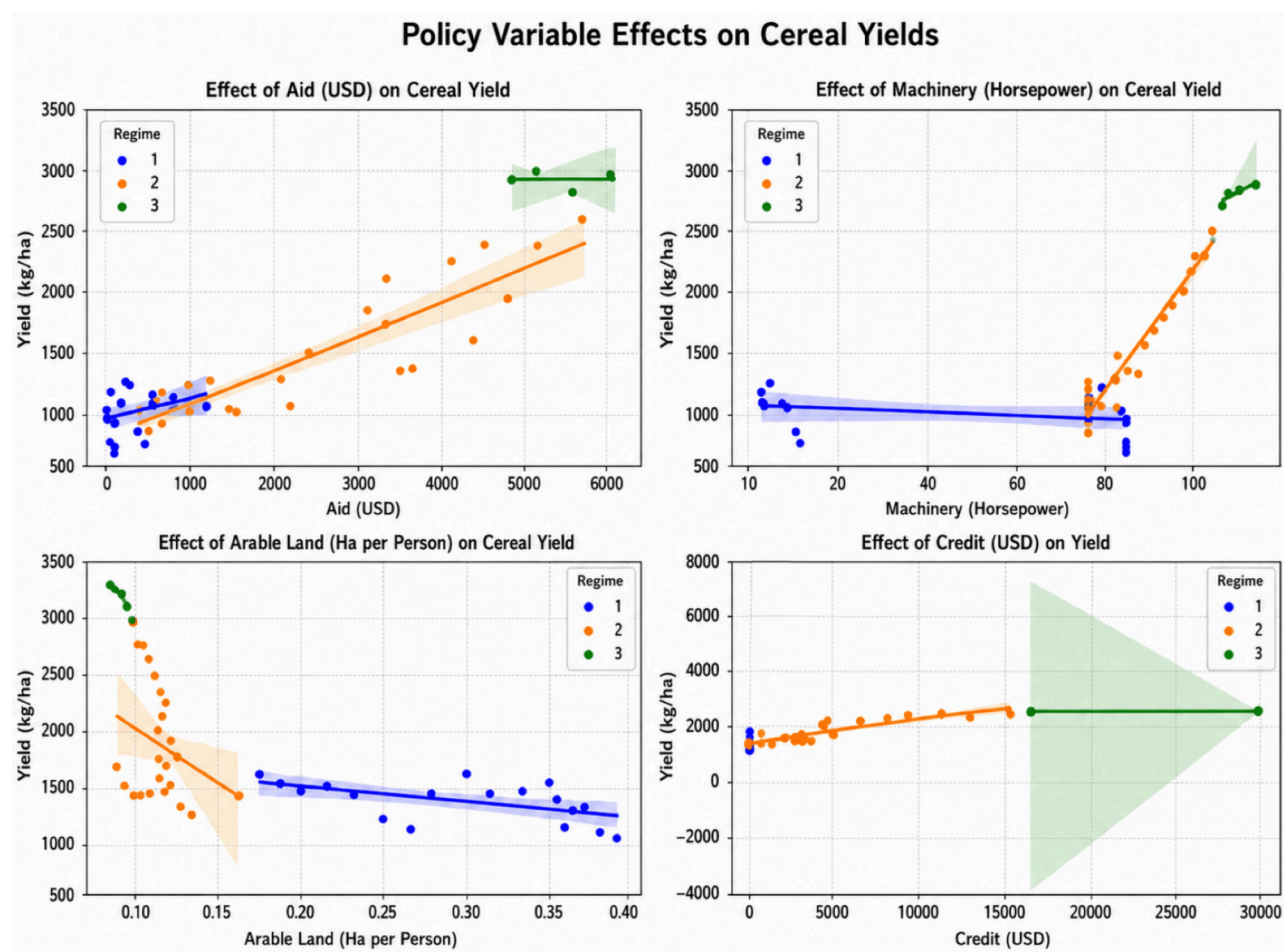


FIGURE 6: Effects of policy variables on cereal yield across political regimes.

Source: Author's own computation using FAO dataset.

Structural break model test results

Diagnostic study and specification tests were conducted to assess the validity of the empirical model the results of which are presented in Table 4. The ADF test results indicate that cereal yield is stationary. Similarly, all political repression indicators exhibit stationarity. These findings confirm the stationarity of the variables and reduce concerns regarding spurious regression.

The F-statistics show that the selected political and policy variables collectively explain variation in cereal yield. Importantly, the block F-test for the repression variables rejects the null hypothesis of joint insignificance, providing statistical support for the paper's core argument that political repression systematically affects agricultural performance.

The findings are in accordance with the cross-country evidence. For instance, Aaltonen and Eloranta [70] show that coercive state practices distort incentives, weaken institutional credibility, and reduce productivity in agrarian economies. In the same vein, a study by Berman and Laitin [71] demonstrates that coercive practices in rural insurgency, including taxation, forced recruitment, and violence, distorting agricultural investment and local market participation, thereby reducing productivity in conflict-prone agrarian systems.

Correspondingly, this study investigated regime heterogeneity and structural stability using Chow tests at historically salient political transitions. The findings reveal breaks across all three historical and modern-period regimes. First, a higher SB is observed in 1974, signaling a shift to the Derg regime. The pronounced SB during this period likely reflects

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the radical transformation of agrarian institutions following land nationalization and the imposition of centralized control. Second, a stronger break is observed in 1992, marking the transition to the EPRDF regime. Third, a significant SB is observed in 2018, indicating a transition to the PP regime and suggesting that recent political realignments have altered the relationship among repression, policy instruments, and agricultural outcomes. These results corroborate the development literature, which argues that regime shift in authoritarian settings often generates discrete institutional shocks with lasting economic consequences [72,73].

The Breusch-Pagan test fails to reject the null of homoskedasticity, while the Ljung-Box statistic at lag 4 indicates no residual autocorrelation.

Test	Statistic	P-value
ADF	−4.21	0.001***
ADF test for repression series	−3.55	0.004***
Joint F-test for all regressors	29.88	0.000***
F-test for repression block	4.17	0.014**
Structural Break (Chow at 1974)	12.44	0.001***
Structural Break (Chow at 1991/92)	15.72	0.000***
Structural Break (Chow at 2018)	6.31	0.013***
Breusch-Pagan test	8.11	0.310
Ljung-Box (lag 4)	3.52	0.440
VIF (mean)	1.98	—

TABLE 4: Model diagnostic results.

*Significant at the 10%, **Significant at 5%, and ***Significant at 1%.

ADF, Augmented Dickey-Fuller test; VIF, Variation Inflation Factor

First-stage IV-2SLS regression results

Table 5 presents first-stage IV-2SLS results. The regression results reveal a positive coefficient on lagged repression, indicating that state repression is highly persistent rather than sporadic. In other words, past repression locks in future repression, reflecting deep institutional continuity. This result suggests that repression is path dependent. Once a government develops a coercive apparatus and bureaucratic habit of using force, it tends to perpetuate itself. In practical terms, this means that repression is not an episodic shock but the outcome of institutional inertia and entrenched security practices. In time-series conflict research, including a lagged-dependent variable is known to capture this kind of temporal dependence [74]. Such persistence is consistent with theories of entrenched authoritarianism [75], which state

that accumulated policing institutions, legal frameworks, and security forces over time make coercion self-reinforcing. Scholars have long noted that when repression becomes routinized, it feeds on its own legacy—past repression creates both the apparatus and the justification for future repression.

Consistent with expectations, IV estimates show that both state-sponsored torture and politically motivated killings have positively and significantly correlated with higher overall repression. In empirical terms, periods with more reported torture or targeted killings also exhibit more repression in general. This finding aligns with the idea that these practices are core tools in an authoritarian regime's arsenal [76]. Kearns [77] emphasizes that torture often serves dual purposes. On the one hand, it can be used interrogatively to extract information and deterrently to intimidate the population. Likewise, state-sanctioned killings are viewed as the ultimate form of coercion, eliminating key opponents and sending a powerful signal of brutality [77]. In effect, torture and killings are not peripheral anomalies but central instruments of coercive governance.

The dummy for the EPRDF regime shows a positive association with repression and especially with torture, reflecting the regime's pattern of widespread coercion. This result accords with qualitative accounts of the period. The EPRDF government repeatedly resorted to mass arrests, torture, and violent crackdowns in response to growing opposition. For example, during the 2015–2016 protests in the Oromia and Amhara regions, HRW documented that security forces had arrested tens of thousands of protesters, students, farmers, and opposition members. According to these reports, lots of people were killed in that crackdown alone. Such repression occurred even as millions of Ethiopians took to the streets for rallies and strikes demanding change. Notably, the sustained public unrest eventually forced political concessions. The pressure culminated in the resignation of the then EPRDF prime minister in early 2018.

The significant positive EPRDF dummy for killings, on the other hand, suggests that deadly violence was woven into the regime's broader system of control rather than occurring as isolated episodes. In practice, the government often deployed extreme forces strategically during periods of political contestation, such as elections, insurgencies, and regional protests [78,79]. Killings were thus part of a coordinated strategy to suppress dissent and reinforce regime dominance. In other words, during the EPRDF years, reported murders of activists or civilians were not random flashpoints but components of a wider coercive structure. This interpretation is consistent with accounts of the era in which opposition activists describe an environment where even children were shot during raids on villages, and military units used live ammunition against protesters in multiple regions.

Unexpectedly and contrary to Hsiang et al. [80], environmental variables, both temperature and precipitation, resulted in statistically insignificant. In the Ethiopian context, this suggests that short-term climate shocks or similar factors did not play a major role in driving state coercion compared to political dynamics. In other words, the data imply that political determinants were much stronger triggers of repression than environmental stresses. The result contrasts with some cross-national studies [80] that emphasize ecological stresses, but it makes sense in a setting where internal political conflict has been so intense. Any environmental effects may be indirect and mediated through political channels, making them hard to detect in our specific cases.

Finally, results of this study show a positive, significant relationship between aid and repression. Larger net inflows of financial assistance tend to coincide with higher levels of political violence and coercion. In line with Wright's [81] findings, the result feeds into a heated debate about aid's political effects. The result is likely because aid bolsters state capacity, including police, the military, and the bureaucratic machinery, in ways that authoritarian rulers can leverage to tighten control. Other studies [82] argue that large aid flows often weaken domestic accountability and even "sustain authoritarian regimes." In other words, external resources may indirectly subsidize coercive institutions. Aid can be fungible, effectively expanding the government's discretionary budget for internal security. When donor conditionality is weak or geopolitical interests prevail, aid may not come with effective human rights checks. As a result, regimes can use those funds to expand surveillance, arm security forces, or otherwise bolster repression. This dynamic underscores why aid can sometimes have perverse consequences. By shoring up state capacity without guaranteeing good governance, it may inadvertently empower the very coercive apparatus that human rights groups criticize [82].

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Variable	Coeff.	Std. Err.	t-stat	P-value	95% CI Lower	95% CI Upper
Lag repression	0.624	0.138	4.522	0.000***	0.344	0.904
Torture (v2cltort)	1.206	0.201	5.999	0.000***	0.799	1.613
Killings (v2clkill)	0.436	0.186	2.344	0.025**	0.058	0.814
Torture × EPRDF	1.352	0.392	3.449	0.001***	0.557	2.147
Torture × PP	−0.287	0.214	−1.341	0.188	−0.721	0.147
Killings × EPRDF	1.163	0.341	3.410	0.002***	0.471	1.855
Killings × PP	0.141	0.497	0.284	0.778	−0.867	1.149
Temperature	0.073	0.051	1.431	0.161	−0.031	0.177
Precipitation	0.040	0.030	1.193	0.241	−0.00003	0.0001
Aid (USD)	0.060	0.030	2.109	0.042**	0.000002	0.000118
Constant	−2.761	1.188	−2.324	0.026**	−5.171	−0.351

TABLE 5: First-stage IV-2SLS regression results for political repression.

Notes: Stars indicate significance level: * $P < 0.10$; ** $P < 0.05$; *** $P < 0.01$.

Aid and precipitation are rescaled by a factor of 1,000 for ease of interpretation of coefficient magnitudes. IV-2SLS, Instrumental Variable-Two-Stage Least Squares; EPRDF, Ethiopian People's Revolutionary Democratic Front; PP, Prosperity Party

Second-stage IV-2SLS regression results

In the second-stage IV-2SLS estimation procedure, cereal yield is treated as a dependent variable. The fitted value obtained from the first-stage regression is included in the second stage. Finding results of the second-stage IV-2SLS are given in Table 6. The results show that severe political repression is significantly associated with lower cereal yields. The coefficient on the repression index is negative and significant, indicating that a one-unit increase in the repression index reduces cereal yield substantially. The result was as expected because the existence of harsh political repression likely spread fears among farming communities, displaced them from their farmland, and strangled the free movement of labor required to execute farming activities, resulting in lower yields. The effect is robust after controlling for agricultural inputs and climate variables. This finding is in accordance with [83], who noted that severe political violence substantially depresses current and future cereal yields. More importantly, the interaction among the regimes shows that the negative effect of political repression is intensified under later regimes. Both coefficients of repression* EPRDF and repression* PP are large, negative, and significant at the 5% significance level. In contrast, repression during the Derg regime is positive but not significant. This pattern likely suggests that political controls during the EPRDF and PP eras had a stronger adverse effect on cereal production than those during earlier regimes. The main regime dummies themselves are not significant, implying that regime affiliation per se had no consistent direct effect once repression is accounted for.

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The findings of this study align with broader theoretical expectations and empirical findings that conflict and violence generally reduce productivity. For instance, according to [84], political instability can negatively impact agricultural productivity by disrupting rural security, reducing input availability, and hindering policy development, leading to violence, displacement, theft, and damage to crops and infrastructure. In Ethiopia, historical cases bear this out. Analysts from 1983 to 1985 famine emphasize that it was not just drought but war and policy that drove mass hunger [85,86]. As an example, the DERG regime's scorched-earth campaigns against rural-held areas systematically destroyed crops, livestock, and food stores to deny resources to insurgents [86].

In contrast to the findings of this study, some cross-country research has found higher agricultural yields under authoritarianism [86]. The argument is that strongmen can mobilize resources for development. However, in the Ethiopian evidence runs counter. The nature of authoritarian rule mattered little; only the intensity of coercion did. The result suggests that coercive control tends to undermine farming anywhere, despite regime claims to be developmental. The findings also echo prior research. For instance, Degefu and Beri [87] noted that political unrest and repression disrupt farming by undermining rural security and services. In the same vein, case studies in Ethiopia which emphasize Derg and the EPRDF, find that the two regimes used agricultural policies, specifically land policies, as tools of control, often at farmers' expense [88]. Farmers who resisted land surveying or failed to meet grain quotas under the Derg risked imprisonment. The result concurs with the study interpretation that surveillance and compliance burdens on large farms reduced yield productivity.

Regarding the other control variables, as expected, fertilizer use and mechanization are positively and significantly correlated with cereal yields. The result is consistent with agronomic evidence that mechanization and fertilizer use raise cereal output. For example, Tilahun et al. [89] noted that agricultural mechanization plays a key role to increase production, productivity and commercialization of cereal crops and find that the use of agricultural machine boosts yields. Similarly, Abebe et al. [90] found that mechanization, such as tractors, combine harvesters, and threshers, significantly improves technical efficiency and yields, while Headey et al. [91] report that Ethiopian plots cultivated under land pressure, and thus using more purchased inputs, achieve significantly higher cereal crop yields per hectare.

Unexpectedly, arable land per person shows a significant negative association with cereal yields. Political-economy factors can explain this inverse effect. Under the Derg and EPRDF regimes, land rights were tied to the ruling party's compliance, and land titling became a means of controlling the farming community [92]. Households with little farm labor were, thus, relocated and placed under tight surveillance to assert state authority. These burdens likely divert time from productive farming, and discourage on-the-ground innovation, which is consistent with the finding of dampened cereal yields on less cramped farms.

On the other hand, smallholder farmers often manage their plots with intensive family labor and frequent crop rotations. Therefore, newly consolidated or resettled farms might be large; however, they are overseen by ruling-party cadres and are likely to engender fear in the farming community, thereby hindering optimal production and incurring heavy monitoring costs of the land. Such trade-offs in agriculture are noted by Wedekind and Chinigò [93], who found that large-scale operations yield only so much; beyond a point, larger farms suffer from inefficiencies and weaker stewardship of head-end monitoring and hired labor. The evidence from this study suggests that regimes likely induced a paradox: land-constrained but regime-affiliated farmers were given stronger incentives to intensify their use of inputs. In contrast, those farmers who are given more land tend to manage it poorly, likely resulted in a negative coefficient for land per person. A related mechanism could be the disruption of social capital and trust. Political repression undermines cooperation and credit networks.

As expected, temperature is negatively and significantly associated with cereal crop yield. Higher average temperature lowers crop yields. The result accords with both climate theory and empirical findings. For instance, agronomic studies show that excessive heat speeds up crop development and shortens maturity time [94], thereby reducing cereal crop yields. Similarly, Hultgren et al. [95] found that warming reduces crop output globally, with the probability of loss ranging from 0.701 (sorghum) to 0.946 (wheat). Unexpectedly, precipitation has an insignificant effect here, possibly due to adaptation although this interpretation is not directly tested here.

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Variable	Coefficient	Std.Err	z-stat	p-value	95% CI (Lower)	95% CI (Upper)
Intercept	87.520	169.440	0.52	0.602	-244.55	419.59
Repression index	-382.613	177.521	-2.16	0.037**	-742.273	-22.953
DERG dummy	-98.370	194.610	-0.51	0.613	-479.76	283.02
EPRDF dummy	-215.460	220.950	-0.97	0.333	-649.52	218.60
PP dummy	182.910	181.270	1.01	0.312	-172.39	538.21
Repression* DERG	149.220	147.850	1.01	0.313	-140.56	439.00
Repression * EPRDF	-401.886	183.960	2.19	0.035**	-29.068	-774.705
Repression * PP	-924.373	417.925	2.21	0.033**	-77.262	-1771.484
Fitted repression	214.066	102.433	2.09	0.043**	6.415	421.717
Machinery	4.370	1.620	2.69	0.007***	1.20	7.54
Fertilizer (FRC) (kg/Ha)	32.551	7.018	4.64	0.000***	18.331	46.771
Aid (USD)	0.049	0.073	0.68	0.504	-0.099	0.197
Arable Land (Ha per person)	-0789.150	298.440	-2.64	0.008***	-1373.10	-205.20
Temperature (°C)	-16.210	6.080	-2.66	0.008***	-28.15	-4.27
Precipitation (Milliliters/Year)	-0.082	0.070	-1.16	0.253	-0.224	0.061
Lagged repression ($t-1$)	-203.170	106.520	-1.91	0.056*	-411.98	5.64
Trend (Year)	40.120	6.970	5.75	0.001***	26.47	53.77

TABLE 6: Second-Stage IV- 2SLS Regression Results.

Notes: Stars indicate significance level: * $P < 0.10$; ** $P < 0.05$; *** $P < 0.01$.

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Conclusions

Enhancing agricultural yields remains a critical challenge for most developing countries mainly due to ineffective policies and systemic political factors. This paper examines the effects of political repression and authoritarian agricultural policies on cereal yields across three historical regimes in Ethiopia. The study challenged the classical political economy argument by developing a new conceptual framework called RB. Unlike orthodox views, authoritarian regimes target rural populations and enact pro-agrarian policies that are, nevertheless, motivated by political interests and thus fail to improve agricultural outcomes. Though past studies argue that regimes develop policies in favor of cities because of the fear that urban elites may organize riots and strikes, this paper contend that in heavily agrarian countries like Ethiopia, where about 85% of the population resides in the rural areas, the most serious threat to the regime's power mostly emerges from the periphery, including rebel resistance. The UB logic is therefore inverted to RB, albeit it results in FRB. Country-level annual time-series data were compiled from the FAO, WB, and V-Dem dataset. The data was analyzed by using IV-2SLS approaches. The regression results reveal that political repression, including state torture, politically targeted killings, and property confiscations, negatively and significantly affected cereal yield. Arable Land per person, a key policy variable, is negatively and significantly associated with cereal yield. The result also shows that warmer temperatures depress crop yields. However, the adoption of agricultural inputs, such as machinery and fertilizer contribute to increased yields.

Policy implications

The following policy implications are drawn for interventions to improve agricultural performance. First, the findings show that severe political repression is negatively and significantly undermine cereal yields, even after controlling for agricultural inputs. Therefore, ensuring political stability, outlawing politically targeted killings and state-sponsored torture, avoiding surveillance on farmers, and ensuring freedom from state violence while protecting farmers' property rights and voice can improve cereal yields. Second, the results reveal that fertilizer application and machinery use positively and significantly correlated with increased yields. Policy makers should prioritize the investment and expansion of agricultural farm inputs to boost cereal yield. On the other hand, the study's findings indicate that cereal yield is sensitive to temperature, accentuating the vulnerability to climatic variability and suggesting investment in the development of heat-tolerant crop varieties and the expansion of irrigation facilities. Third, arable Land per person is negatively and significantly associated with cereal yield. Therefore, land redistribution policies and tenure system programs that would align farmer incentives with investment, rather than the current system of threats and expropriations, should be enacted. Finally, this study used aggregated cereal data for Ethiopia. Future research should examine whether the effect of political repression differs by crop type and whether incorporating additional V-Dem political variables alters the estimates. To strengthen external validity, future work may also benefit from comparative analysis across cross country or regions.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Sisay Diriba Lemessa

Acquisition, analysis, or interpretation of data: Sisay Diriba Lemessa

Drafting of the manuscript: Sisay Diriba Lemessa

Critical review of the manuscript for important intellectual content: Sisay Diriba Lemessa

Supervision: Sisay Diriba Lemessa

How to cite this article:

Lemessa S (July 14, 2026) Political Repression, Authoritarian Governance, and Agricultural Performance: Evidence from Ethiopia. *Cureus J. Agri. Food Sci 2* : es44497-026-00163-z. DOI <https://doi.org/10.7759/s44497-026-00163-z>

Disclosures

Plant subjects: All authors have confirmed that this study did not involve any herbarium specimen. **Human subjects:** All authors have confirmed that this study did not involve human participants or tissue. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

Data Availability Statements

The datasets (and/or code) supporting this study are available from the corresponding author upon reasonable request.

References

1. Bates RH: [Markets and States in Tropical Africa: The Political Basis of Agricultural Policies](#). University of California Press, Berkeley; 1981.
2. Chinigò D: [The politics of land registration in Ethiopia: territorialising state power in the rural milieu](#). Review of African Political Economy. 2015, 42:174-189.
3. Huggins, C: [Agricultural Reform in Rwanda: Authoritarianism, Markets and Zones of Governance](#). Bloomsbury Publishing, Dublin; 2017.
4. Albertus, M: [How authoritarians turn rural areas into their strongholds](#). The Atlantic. 2021,
5. Marcus HG: [Encyclopaedia Britannica Editors](#). Encyclopaedia Britannica, 2026.
6. Love R: [Reviewed work: Development without freedom: how aid underwrites repression in Ethiopia by Human Rights Watch](#). Review of African Political Economy. 2011, 38:497-498.
7. Monjane B, Bruna N: [Confronting agrarian authoritarianism: dynamics of resistance to PROSAVANA in Mozambique](#). The Journal of Peasant Studies. 2019, 47:69-94. [10.1080/03066150.2019.1671357](#)
8. Resnick D, Birner R: [Agricultural strategy development in West Africa: the false promise of participation?](#). Development Policy Review: The Journal of the Overseas Development Institute. 2009, 28:97-115. [10.1111/j.1467-7679.2010.00476.x](#)
9. Rahmato, D: [The Peasant and the State: Studies in Agrarian Change in Ethiopia](#). Addis Ababa University Press, Ethiopia; 2008.
10. Woldeesenbet WG: [The tragedies of a state dominated political economy: shared vices among the imperial, Derg, and EPRDF regimes of Ethiopia](#). Development Studies Research. 2020, 7:72-82. [10.1080/21665095.2020.1785903](#)
11. Thomson H: [Food and Power: Regime Type, Agricultural Policy, and Political Stability](#). Cambridge University Press, Cambridge; 2019.
12. Wallace J: [Cities, redistribution, and authoritarian regime survival](#). The Journal of Politics. 2013, 75:632-645.
13. Legesse Z, Shumetie A: [Determinants of multidimensional poverty in rural Ethiopia](#). Sage Open. 2026, 16:1-18. [10.1177/21582440251410634](#)
14. Rabinowitz BS: [Urban-Bias and the Roots of Political Instability: The Case for the Strategic Importance of the Rural Periphery in Sub-Saharan Africa](#). University of California, Berkeley; 2013.
15. Ottaway M: [Land reform in Ethiopia, 1974-1977](#). African Studies Review. 2014, 17:79-90.
16. Erko HG, Wayessa TT, Tuffa TZ: [Resettlement and state farm in central Ethiopia: analyzing the Dhaadallee-Harroollee resettlements and the Ethio-Yemen state farm \(1974-1991\)](#). Cogent Arts and Humanities. 2025, 12:1-25. [10.1080/23311983.2025.2469458](#)
17. Jephias M: [Skewed rural development policies and economic malaise in Zimbabwe](#). African Journal of History and Culture. 2015, 7:142-151. [10.5897/ajhc2015.0269](#)

How to cite this article:

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18. Diriba G : [Agricultural and rural transformation in Ethiopia: obstacles, triggers and reform considerations](#). Ethiopian Journal of Economics . 2020, 27:51-110.
19. Labzaé M, Planel S: [We cannot please everyone": contentions over adjustment in EPRDF Ethiopia \(1991-2018\)](#). International Review of Social History. 2021, 66:69-91. [10.1017/S0020859021000158](#)
20. Elias A, Nohmi M, Yasunobu K, Ishida A: [Effect of agricultural extension program on smallholders' farm productivity: evidence from three peasant associations in the highlands of Ethiopia](#). Journal of Agricultural Science. 2013, 5:163-175. [10.5539/jas.v5n8p163](#)
21. Marzocchi G, Arribas CJ: [Land grabbing and development: the case of Ethiopia](#). Journal of Asian and African Studies. 2024, 60:4170-4187. [10.1177/00219096241243281](#)
22. Shikur ZH: [Agricultural policies, agricultural production and rural households' welfare in Ethiopia](#). Journal of Economic Structures. 2020, 9:1-21. [10.1186/s40008-020-00228-y](#)
23. Kassahun B: [Agricultural extension in Ethiopia: economic growth and political control](#). Future Agricultures. 2012, 1-22.
24. Wayessa GO: [State-building and development in Ethiopia: from "developmental state" to "prosperity" model](#). Northeast African Studies. 2021, 21:83-115. [10.14321/nortafirstud.21.2.083v](#)
25. Wazza MT: [Ten years development plan of Ethiopia \(2021-2030\): a critical review](#). Technical Report. 2022, 1-14.
26. Ayele ZY, Cochrane L: [From developmentalism to the homegrown economy of Ethiopia: the narratives and the reality](#). Heliyon. 2024, 10:1-12. [10.1016/j.heliyon.2024.e35021](#)
27. Reuters: [In Ethiopia, a secret committee orders killings and arrests to crush rebels](#). 2024-02-23, Accessed: May 24, 2026: <https://www.reuters.com/investigates/special-report/ethiopia-violence-committee/>.
28. Borkena: [Gaachana Sirnaa: Reported forced conscription in the Oromia region of Ethiopia](#). 2024, Accessed: May 24, 2026: <https://borkena.com/2024/08/01/gaachana-sirnaa-reported-forced-conscription-in-the-oromia-region-of-ethiopia/>.
29. Addis Standard: [Residents of Ambo recount a city under siege by criminal gangs after social media revelations expose disturbing abuses](#). 2026, Accessed: May 25, 2026: [https://addisstandard.com/residents-of-ambo-recount-a-city-under-siege-by-criminal-gangs-after-social-media-revelatio....](https://addisstandard.com/residents-of-ambo-recount-a-city-under-siege-by-criminal-gangs-after-social-media-revelatio...)
30. Oromia Support Group: [Oromia Support Group submits damning report to UN Human Rights Council, documents over 7,500 civilian deaths](#). 2026, Accessed: May 25, 2026: [https://advocacy4oromia.org/2026/03/04/oromia-support-group-submits-damning-report-to-un-human-rights-council-documen....](https://advocacy4oromia.org/2026/03/04/oromia-support-group-submits-damning-report-to-un-human-rights-council-documen...)
31. United Nations Children's Fund (UNICEF) Ethiopia: [Highlights of federal budget proclamation 2024-25](#). UNICEF. 2024, 1-14.
32. The Reporter Ethiopia: [50 years of land policy: Lessons learned, future directions](#). The Reporter Ethiopia. 2025-03-14, Accessed: April 23, 2026: <https://www.thereporterethiopia.com/44159/>.
33. Anderson K, Masters WA: [Distortions to Agricultural Incentives in Africa](#). World Bank, Washington, DC; 2009.
34. Anderson K, Masters WA, Kurzweil M: [How Far Has Africa Come in Reducing its Anti-agricultural Policy Bias?, School of Economics and Public Policy Working Papers 2009-07](#). University of Adelaide, School of Economics and Public Policy, 2009.
35. Balino S, Laborde D, Murphy S, Parent M, Smaller C, Traoré F: [Agricultural bias in focus](#). International Food Policy Research Institute. 2019, 1-26.
36. Albertus M: [The political price of authoritarian control: Evidence from Francoist land settlements in Spain](#). Journal of Politics. 2023, 85:1258-1274.
37. Planel S: [A view of abureaucraticdevelopmental state: local governance and agricultural extension in rural Ethiopia](#). Journal of Eastern African Studies. 2014, 8:420-437. [10.1080/17531055.2014.922745](#)
38. Regassa A, Hizekiel Y, Korf B: ['Civilizing' the pastoral frontier: land grabbing, dispossession and coercive agrarian development in Ethiopia](#). The Journal of Peasant Studies. 2018, 46:935-955. [10.1080/03066150.2017.1420060](#)
39. Liu Y: [Albertus, Michael. \(2021\). Property without rights: origins and consequences of the property rights gap](#). ARPE. 2023, 2:1-2.
40. Berhanu K, Poulton C: [The political economy of agricultural extension policy in Ethiopia: economic growth and political control](#). 2014, 32:s197-s213. [10.1111/dpr.12082](#)
41. Holz CA: [China's economic growth 1978-2025: what we know today about China's economic growth tomorrow](#). World Development. 2008, 36:1665-1691. [10.1016/j.worlddev.2007.09.013](#)

How to cite this article:

Lemessa S (July 14, 2026) Political Repression, Authoritarian Governance, and Agricultural Performance: Evidence from Ethiopia. Cureus J. Agri. Food Sci 2 : es44497-026-00163-z. DOI <https://doi.org/10.7759/s44497-026-00163-z>

42. Puddu L: [A pragmatic high modernism? Rural development and state building in the Ethiopian lowlands, c. 1960-2019](#). Critical African Studies. 2022, 14:311-329. [10.1080/21681392.2022.2076705](#)
43. Welteji D: [A critical review of rural development policy of Ethiopia: access, utilization and coverage](#). Agriculture & Food Security. 2018, 7:1-6. [10.1186/s40066-018-0208-y](#)
44. Lorato T, Beyene T, Tadesse T: [Unintended structural transformation and growth in Ethiopia: an autoregressive distributed lag \(ARDL\) model approach](#). Journal of Innovation and Entrepreneurship. 2025, 14:1-22. [10.1186/s13731-025-00498-5](#)
45. Planning and Development Commission: [Ethiopia: Ten years development plan \(2021-2030\)](#). European Commission. 2020, 4. Accessed: March 5, 2026: <https://capacity4dev.europa.eu/library/ethiopia-ten-years-development-plan-2021-2030-planning-and-development-commiss....>
46. Khairo SA, Battese GE, Mullen JD: [Agriculture, food insecurity and agricultural policy in Ethiopia](#). Outlook on Agriculture. 2005, 34:77-82. [10.5367/0000000054224300](#)
47. Elias GD: [Local governance, EPRDF rule and peasants in Oromia National Regional State, Ethiopia](#). Cogent Social Sciences. 2025, 11:1-22. [10.1080/23311886.2025.2511675](#)
48. Abate T, Shiferaw B, Gebeyehu S, et al.: [A systems and partnership approach to agricultural research for development](#). Outlook on Agriculture. 2011, 40:213-220. [10.5367/oa.2011.0048](#)
49. Cordonnier V, Covarrubias KA, de la O Campos AP: [The impacts of widespread agricultural interventions on yields and food security in Ethiopia](#). Food Policy. 2024, 124:102626. [10.1016/j.foodpol.2024.102626](#)
50. Coppedge M, Gerring J, Knutsen CH, et al.: [Varieties of Democracy \(V-Dem\) Country-Year Dataset v14](#). University of Gothenburg, 2024.
51. Knutsen CH: [Life of the party: explaining cross-country variation in V-Dem Party Institutionalization measures](#). V-Dem Working Paper Series. 2019, 2020:
52. Düpont N, Kavasoglu B, Lührmann A, Reuter OJ: [Party organizations around the globe: introducing the varieties of party identity and organization dataset \(V-Party\)](#). V-Dem Working Paper. 1-28.
53. Lührmann A, Lindberg SI: [A third wave of autocratization is here: what is new about it?](#). Democratization. 2019, 26:1095-1113.
54. Robinson JA, Acemoglu D: [Why nations fail: the origins of power, prosperity, and poverty \(Book review\)](#). The Economist. 2012,
55. Gerring J, Knutsen CH, Maguire M, Svend-Erk, Teorell SJ, Coppedge M: [Democracy and human development: issues of conceptualization and measurement](#). Democratization. 2020, 28:308-332. [10.1080/13510347.2020.1818721](#)
56. Goldstein M, Udry C: [The profits of power: land rights and agricultural investment in Ghana](#). The Journal of Political Economy. 2008, 116:981-1022. [10.1086/595561](#)
57. Besley T, Ghatak M: [Property rights and economic development](#). Handbook of Development Economics. Rodrik, D. (ed): Elsevier, The Netherlands; 2010. 5:4525-4595.
58. Perron P: [The great crash, the oil price shock, and the unit-root hypothesis](#). Econometrica. 1989, 57:1361-1401. [10.2307/1913712](#)
59. Alesina A, Favero C, Giavazzi F: [Austerity: when it works and when it doesn't](#). IRIS. 2019,
60. Lu J, Hu A, Yan Y: [Nonlinear investigations of China's agricultural transformation](#). China Agricultural Economic Review. 2012, 4:52-68. [10.1108/17561371211196775](#)
61. Ngobeni E, Muchopa CL: [Structural change in the South African agricultural sector: Bai-Perron modelling](#). Scientific African. 2023, 21:1-11. [10.1016/j.sciaf.2023.e01732](#)
62. Ghosh M: [Structural breaks and performance in Indian agriculture](#). Indian Journal of Agricultural Economics. 2010, 65:1-21. [10.22004/ag.econ.204670](#)
63. Kennedy PL, Schmitz A, Linscombe S, Zhang F: [The impact of cultivar development and cultural practices on Louisiana rice yield](#). Agrosystems, Geosciences & Environment. 2022, 5:1-11. [10.1002/agg2.20231](#)
64. Chow GC: [Tests of equality between sets of coefficients in two linear regressions](#). Econometrica. 1960, 28:591-605. [10.2307/1910133](#)
65. Wooldridge JM: [Introductory Econometrics: A Modern Approach](#), 6th ed. Cengage, Kentucky, USA; 2016.

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Lemessa S (July 14, 2026) Political Repression, Authoritarian Governance, and Agricultural Performance: Evidence from Ethiopia. Cureus J. Agri. Food Sci 2 : es44497-026-00163-z. DOI <https://doi.org/10.7759/s44497-026-00163-z>

66. Ayele S: [The resurgence of agricultural mechanisation in Ethiopia: rhetoric or real commitment?](#). Journal of Peasant Studies. 2022, 49:137-157. [10.1080/03066150.2020.1847091](#)
67. African Development Bank Group: [African Economic Outlook 2024: Driving Africa's Transformation - The Reform of the Global Financial Architecture](#). African Development Bank Group, 2024.
68. Bachewe FN, Berhane G, Minten B, Taffesse AS: [Agricultural growth in Ethiopia \(2004-2014\): evidence and drivers](#). Gates Open Research. 2019, 3:1-45. [10.21955/gatesopenres.1115512.1](#)
69. Rampa G, Lovo, S: [Revisiting the effects of the Ethiopian land tenure reform using satellite data: A focus on agricultural productivity, climate change mitigation and adaptation](#). World Development . 2023, 171:106364.
70. Aaltonen H, Eloranta J: [Acemoglu, Daron; Robinson, James \(2019\), The Narrow Corridor. States, Societies, and the Fate of Liberty, Penguin Publishers, New York. 576 pages. Configurações. 2020, 26:151-154. 10.4000/configuracoes.10341](#)
71. Berman E, Laitin D: [The economics of insurgency in rural areas](#). NBER Working Paper No 27092. 1-45. [10.3386/w27092](#)
72. Feye DA, Beyene AB, Kumar SK: [Climate and political effects on agriculture: empirical evidence from SSA](#). International Studies of Economics. 2024, 20:322-343. [10.1002/ise3.98](#)
73. Gejea YM, Tolesa SF: [The impact of national and international war on agriculture in Ethiopia: a review](#). International Journal of Social Science, Management and Economics Research. 2024, 2:55-68. [10.61421/ijssmer.2024.2404](#)
74. Sullivan CM, Loyle CE, Davenport C: [The coercive weight of the past: temporal dependence and the conflict-repression nexus in the Northern Ireland "troubles"](#). International Interactions. 2012, 38:426-442. [10.1080/03050629.2012.697005](#)
75. Levitsky S, Way LA: [Competitive Authoritarianism: Hybrid Regimes After the Cold War](#). Cambridge University Press, 2010. [10.1017/CBO9780511781353](#)
76. Davenport C: [State Repression and the Domestic Democratic Peace](#). Cambridge University Press, 2007. [10.1017/CBO9780511510021](#)
77. Kearns E: [The study of torture: why it persists, why perceptions of it are malleable, and why it is difficult to eradicate](#). Laws. 2014, 4:1-15. [10.3390/laws4010001](#)
78. Straus S: [Making and Unmaking Nations: War, Leadership, and Genocide in Modern Africa](#). Cornell University Press, Ithaca, NY; 2018.
79. Priselac J: [Review of final solutions: mass killing and genocide in the twentieth century](#). SAIS Review of International Affairs. 2005, 25:207-209. [10.1353/sais.2005.0015](#)
80. Hsiang SM, Burke M, Miguel E: [Quantifying the influence of climate on human conflict](#). Science. 2013, 341:1235367. [10.1126/science.1235367](#)
81. Wright J: [How foreign aid can foster democratization in authoritarian regimes](#). American Journal of Political Science. 2009, 53:552-571. [10.1111/j.1540-5907.2009.00386.x](#)
82. Dijkstra G: [Aid and good governance: examining aggregate unintended effects of aid](#). Evaluation and Program Planning. 2017, 68:225-232. [10.1016/j.evalprogplan.2017.09.004](#)
83. McCann JC: [The history of agriculture in Ethiopia](#). Oxford Research Encyclopedia of African History. Spear, T. (ed): Oxford University Press, New York, NY; 2017. [10.1093/acrefore/9780190277734.013.255](#)
84. Vani GK, Shrivastav A, Rajpoot A: [Agricultural growth and political regimes](#). Quarterly Journal for Applied Science. 2023, 13:1056-1058.
85. Archer DW, Dawson J, Kreuter UP, Hendrickson M, Halloran JM: [Social and political influences on agricultural systems](#). Renewable Agriculture and Food Systems. 2008, 23:272-284. [10.1017/s174217050700169x](#)
86. Bradley M: [The Politics and Everyday Practice of International Humanitarianism](#). Oxford University Press, 2023. [10.1093/oso/9780198840695.001.0001](#)
87. Degefu S, Beri G: [Agricultural policies and strategies in Ethiopia: a review on transformation towards an improved agricultural extension](#). Middle East Research Journal of Agriculture and Food Science. 2024, 4:186-192. [10.36348/merjafs.2024.v04i05.004](#)
88. Liu Y, Yamauchi F: [Population density, migration, and the returns to human capital and land: insights from Indonesia](#). Food Policy. 2014, 48:182-193. [10.1016/j.foodpol.2014.05.003](#)

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89. Tilahun S, Kuma B, Bedemo A: [Impacts of agricultural machine renting on cereal crop productivity and commercialization in West Gojjam Zone, Ethiopia](#). Plos One. 2025, 20:1-23. [10.1371/journal.pone.0300831](#)
90. Abebe GM, Demissie WM, Zewdie MC: [Mechanization enhances wheat yield and technical efficiency: evidence from smallholder farmers in the Arsi zone, Oromia Region, Ethiopia](#). Research Square. 2026, 1-33. [10.21203/rs.3.rs-6149185/v1](#)
91. Headey D, Dereje M, Taffesse AS: [Land constraints and agricultural intensification in Ethiopia: a village-level analysis of high-potential areas](#). Food Policy. 2014, 48:129-141. [10.1016/j.foodpol.2014.01.008](#)
92. Amare A, Gebreegziabher W, Markos G: [Land titling and power building in the three regimes of Ethiopia: the last Empire, the first Republic, and the second Republic](#). Journal of Culture Society and Development. 2020, 55:10-20. [10.7176/JCSD/55-02](#)
93. Wedekind J, Chinigò D: [Contract and control: agrarian labour mobilisation and resistance under large-scale land investments for biofuel crop production in Ethiopia](#). 2020, 33:49-78. [10.3406/ethio.2020.1687](#)
94. Hao W, Hu X, Wu G, Zhang Z, Cai M, Zhou H, Liu X: [The impact of plot size and farm size on crop production: evidence from mechanization and labor input perspectives](#). Energy Nexus. 2025, 19:1-14. [10.1016/j.nexus.2025.100530](#)
95. Hultgren A, Carleton T, Delgado M, et al.: [Impacts of climate change on global agriculture accounting for adaptation](#). Nature. 2025, 642:644-652. [10.1038/s41586-025-09085-w](#)

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