

# Political Economy of Agriculture in Bihar: Policy, Subsidy, And Farmer Representation

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## Abstract

Agriculture remains central to Bihar's rural economy, yet persistent structural and institutional challenges limit equitable access to state support among farming communities. This study examines the political economy of agriculture in Bihar with specific attention to policy implementation, subsidy distribution, and farmer representation. Using a mixed-methods design across four districts, data were collected from 300 farmers through surveys, focus group discussions, and key informant interviews with Panchayat leaders, PACS officials, FPO representatives, and extension workers. The findings reveal pronounced disparities in policy awareness and subsidy access between marginal and medium farmers. Marginal farmers exhibited significantly lower awareness of government schemes and faced greater bureaucratic and digital barriers, resulting in reduced access to fertilizer, seed, diesel, and insurance subsidies. Institutional participation emerged as a key determinant influencing both awareness and access, yet overall membership in PACS and FPOs remained low, particularly among women and marginalized caste groups. Qualitative insights further indicate the presence of elite capture in local governance structures, where influential actors mediated access to subsidized resources, reinforcing existing hierarchies. Additionally, inadequate irrigation infrastructure was identified as a critical constraint that limited the overall effectiveness of subsidies. The findings suggest that agricultural outcomes in Bihar are shaped not only by economic constraints but also by socio-political dynamics, institutional weaknesses, and unequal power relations. The study argues for inclusive policy reforms, strengthened institutional participation, improved transparency, and strategic investment in irrigation infrastructure to ensure more equitable and sustainable agricultural development in Bihar.

**Keywords:** Agriculture, Subsidy, Policy, Institutions, Representation

## 1. Introduction

Agriculture forms the socio-economic foundation of Bihar, where nearly 88 percent of landholdings belong to marginal and small farmers, and the sector provides livelihoods to more than two-thirds of the population (Government of Bihar, 2022; Singh & Sharma, 2020). Despite notable strides in production—especially after the post-2005 governance reforms—the state continues to experience chronic agrarian challenges, including inadequate irrigation infrastructure, low mechanization, and limited access to institutional credit (Kumar, 2019; Narayan & Singh, 2021). These challenges are compounded by frequent floods and droughts, making Bihar's agrarian system highly vulnerable to

ecological and market uncertainties (Sharma & Kumar, 2020). Within such conditions, the political economy perspective becomes essential because agricultural outcomes are not determined solely by resource availability but by the interaction of political structures, economic incentives, and institutional power relations (Bardhan, 2021).

The political economy of agriculture in Bihar is deeply shaped by policy interventions and the manner in which they are implemented. Government schemes related to fertilizer subsidies, crop insurance, diesel subsidies, procurement mechanisms, and irrigation development are central to the agricultural landscape (Chandra, 2018). However, empirical studies show that subsidy distribution is often influenced by patronage networks, bureaucratic bottlenecks, and local elite control—creating differential access among farmers based on caste, land class, and political connectivity (Jha, 2021; Harriss, 2018). Small and marginal farmers, who form the majority, often face barriers such as limited information, digital gaps in accessing DBT schemes, and lack of documentary evidence for land ownership, which reduces their capacity to benefit from state programs (Pandey & Mishra, 2020; Sinha, 2019).

Farmer representation is another critical dimension of the political economy. Institutions such as Panchayati Raj Institutions (PRIs), cooperative societies, Kisan Sabha networks, and emerging Farmer Producer Organizations (FPOs) act as platforms through which farmers engage with the state and market (Baviskar, 2019). Effective representation within these institutions enhances farmers' bargaining power, facilitates collective access to subsidies, and helps in voicing demands for infrastructural support (Deshpande & Datt, 2020). However, structural inequalities persist: elite farmers and dominant caste groups frequently occupy leadership positions in cooperatives and PRIs, leading to what scholars describe as "elite capture" of agricultural governance structures (Mansuri & Rao, 2013; Dubey, 2020). Consequently, marginalized farmers—including women, Dalits, and landless cultivators—remain peripheral in decision-making processes that directly affect their livelihood (Kumar & Sharma, 2021).

Bihar's agrarian politics is further influenced by historical factors such as the legacy of zamindari abolition, the Green Revolution's limited spread in the region, and the shift toward welfare-driven governance in the 2000s. These socio-political trajectories have created a unique environment where state policies attempt to promote agricultural modernization but often fall short due to weak institutional capacity and entrenched rural hierarchies (Brass, 2020; Jannuzi, 2021). Recent policy reforms, including the promotion of FPOs, attempts to diversify cropping patterns, and input subsidy expansion, reflect the state's push toward agricultural transformation, but their effectiveness remains uneven across regions (Narayan & Singh, 2021).

In this context, examining the political economy of agriculture in Bihar requires deeper inquiry into three interlinked aspects: (1) the design and implementation of agricultural policies, (2) the distributional logic and outcomes of subsidy mechanisms, and (3) the nature and effectiveness of farmer representation in political and institutional spaces. Understanding these dimensions is essential for identifying the structural constraints limiting agrarian development and proposing pathways for more equitable and participatory governance. The present study aims to analyze these dynamics by integrating field-level data with policy analysis, contributing to a nuanced understanding of how power, politics, and institutions shape agricultural outcomes in Bihar.

## METHODOLOGY

This study employs a mixed-methods research design to examine the political economy of agriculture in Bihar, with particular attention to agricultural policies, subsidy distribution patterns, and farmer representation. A mixed-methods approach is appropriate because agricultural governance involves both measurable outcomes—such as access to subsidies—and complex political and institutional dynamics that require qualitative exploration. By integrating quantitative survey data with qualitative interviews and document analysis, the study enhances validity through triangulation and provides a multidimensional understanding of the subject (Creswell & Plano Clark, 2018).

The research was conducted in four districts of Bihar: Rohtas, Nalanda, Muzaffarpur, and Purnea, chosen to reflect variations in agro-ecological conditions, irrigation availability, cropping patterns, and institutional presence. These districts represent south, central, and north Bihar, enabling the research to capture regional disparities and structural diversity. Within each district, blocks were selected through stratified random sampling to include both high-performing and low-performing agricultural regions. Villages within these blocks were then chosen through simple random sampling, ensuring that the sample reflects typical agrarian configurations across the selected regions.

A multi-stage sampling strategy was used to select respondents. From the sampled villages, 300 farmers were selected, comprising marginal, small, and medium cultivators. The classification of farmers by landholding size followed national and state agricultural guidelines. To supplement farmer perspectives, key institutional actors such as Panchayat representatives, Primary Agricultural Cooperative Societies (PACS) officials, Farmer Producer Organization (FPO) leaders, and agriculture extension workers were purposively selected for qualitative interviews. These stakeholders occupy strategic positions within the policy implementation chain and influence farmers' access to agricultural services and subsidies.

Data collection relied on both quantitative and qualitative tools. A structured questionnaire was administered through face-to-face interviews with farmers to avoid non-response errors and to accommodate respondents with low literacy levels. The questionnaire covered socio-economic characteristics, awareness of agricultural policies, access to subsidies such as seed support, fertilizer subsidies, irrigation assistance, diesel subsidies, and crop insurance, participation in institutional platforms, and perceptions of policy fairness. Qualitative data were collected through in-depth interviews with 25 key informants and through focus group discussions (FGDs) conducted in eight villages. These methods generated nuanced insights into local power relations, elite control of institutions, bureaucratic constraints, and farmers' lived experiences of accessing state benefits. Additionally, policy documents—such as Bihar Agriculture Roadmaps, DBT guidelines, and cooperative governance regulations—were systematically reviewed to contextualize field findings within the state's policy framework.

Several variables were analyzed in the study. Independent variables included landholding size, caste group, education level, policy awareness, and membership in institutions such as PRIs, PACS, and FPOs. Dependent variables included access to agricultural subsidies, participation in decision-making processes, perceived fairness of policy implementation, and level of representation. The operational definitions of variables were derived from previous political economy and agrarian studies (Harriss, 2018; Jha, 2021). For example, "access to subsidy" was defined as the actual receipt of any state-sanctioned agricultural subsidy (such as seeds, fertilizers, or diesel assistance) within the last two years. Quantitative data analysis was carried out using Prism Ver. 5 and MS Excel. Descriptive statistics—such as frequencies, percentages, and means—were used to summarize the data. Cross-tabulation and Chi-

square tests were employed to examine associations between farmer categories and subsidy access, while correlation analysis helped explore relationships between policy awareness and subsidy utilization. Qualitative data were analyzed through thematic analysis following Braun and Clarke's (2006) coding framework, which involved identifying recurring themes such as bureaucratic delays, caste-based exclusion, digital barriers in DBT systems, and elite capture of cooperatives. The results from quantitative and qualitative analyses were triangulated to strengthen the reliability of interpretations. Ethical considerations were strictly followed throughout the study. All respondents were informed about the purpose of the research, participation was voluntary, and informed consent was obtained before each interview. Data confidentiality was maintained, and respondents' names or identifying details were anonymized to prevent any potential political or social repercussions. The study adhered to established ethical guidelines for social science research, emphasizing respect, privacy, and non-coercion. The study also acknowledges certain limitations. Although the selected districts represent diverse regions of Bihar, the findings cannot be assumed to generalize the entire state due to socio-political variations beyond the sampled sites. Since the study relies partly on self-reported information, responses may involve recall bias or social desirability bias. Additionally, the political sensitivity surrounding subsidy distribution may have influenced the openness of some officials during interviews. Despite these constraints, the mixed-methods approach, regional diversity of the sample, and triangulation of data collectively enhance the robustness and validity of the research outcomes.

**Table 1.** This table summarizes the research methodology employed in the study, including the research design, sampling process, study area, data collection tools, variables, analytical techniques, ethical considerations, and key limitations. It provides an overview of how the study was structured to examine the political economy of agriculture in Bihar.

Component	Description
<b>Research Design</b>	Mixed-methods design integrating quantitative surveys with qualitative interviews and FGDs.
<b>Study Area</b>	Four districts of Bihar: Rohtas, Nalanda, Muzaffarpur, and Purnea representing regional diversity.
<b>Sampling Technique</b>	Multi-stage sampling: purposive district selection → stratified block selection → random village selection → farmer selection.
<b>Sample Size</b>	300 farmers (75 per district), plus 25 key informants (PRI members, PACS officials, FPO leaders, extension officers).
<b>Quantitative Tools</b>	Structured questionnaire covering socio-economic profile, subsidy access, policy awareness, institutional participation, and perceptions.
<b>Qualitative Tools</b>	In-depth interviews, Focus Group Discussions (8 FGDs), and policy document analysis.
<b>Key Variables</b>	Independent variables: landholding, caste, education, policy awareness, membership in institutions. Dependent variables: subsidy access, participation, perceived fairness, representation level.
<b>Data Analysis (Quantitative)</b>	Descriptive statistics, cross-tabulations, Chi-square tests, and correlation analysis using SPSS and MS Excel.
<b>Data Analysis</b>	Thematic analysis following Braun & Clarke's coding framework.

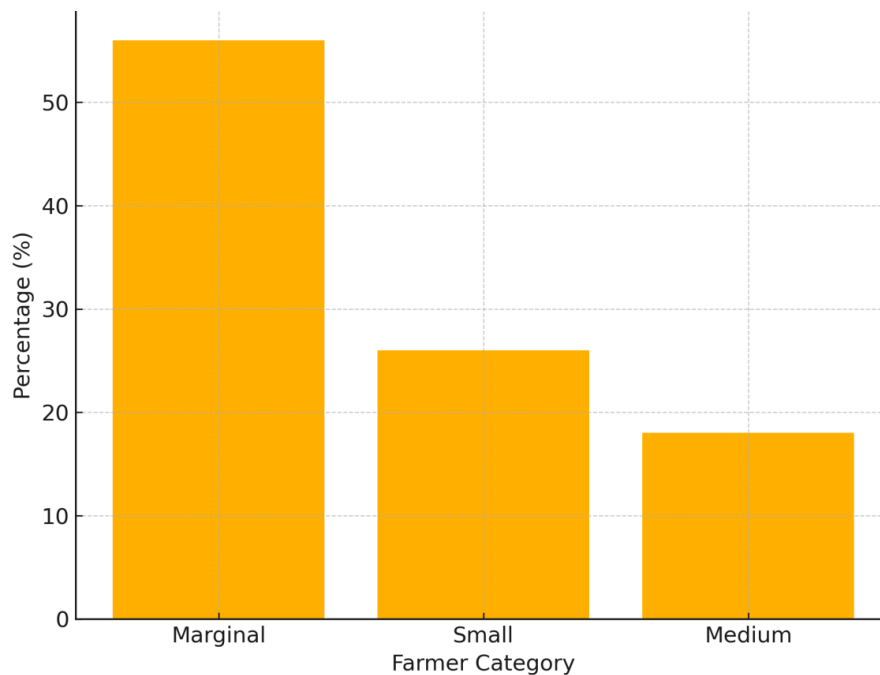
(Qualitative)	
<b>Ethical Considerations</b>	Informed consent, confidentiality, anonymity, voluntary participation.
<b>Limitations</b>	Limited district coverage, self-reported data bias, sensitivity around subsidy discussions.

## RESULTS

The findings of the study present a layered understanding of the political economy of agriculture in Bihar. The results highlight structural inequalities, information gaps, governance challenges, and the significant role of institutional participation in shaping farmers' access to agricultural policies and subsidies. They also illustrate how socio-economic stratification, elite mediation, and infrastructural barriers influence agricultural outcomes across the sampled districts.

### Socio-Economic and Landholding Characteristics

The socio-economic composition of the sample reflects Bihar's agrarian structure dominated by small-scale cultivation. Marginal farmers (56%) form the overwhelming majority, followed by small farmers (26%) and medium farmers (18%). This distribution demonstrates the prevalence of fragmented and low-resource agriculture, where most households operate on less than one hectare of land. Land fragmentation was frequently mentioned in interviews as a barrier to adopting improved technologies, securing credit, and achieving economies of scale.



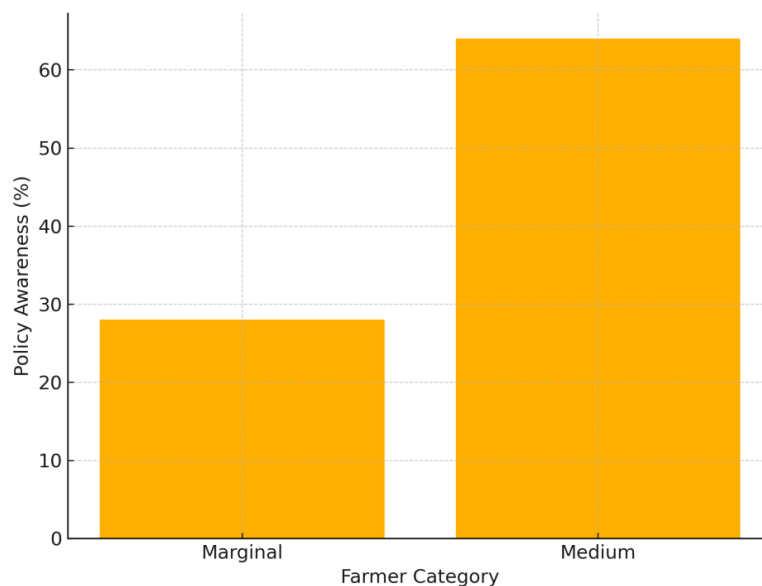
**Figure 1. Landholding Profile of Surveyed Farmers**

Farmers noted that fragmented landholdings often forced them to cultivate multiple dispersed plots, increasing workload and reducing irrigation efficiency. This pattern directly impacts subsidy access

because smaller and scattered fields often lack documented land records, making many marginal farmers ineligible for schemes requiring formal land verification.

## Awareness of Agricultural Policies and Schemes

A major challenge identified in the study is the low level of policy awareness among marginal farmers. Only **28%** of marginal farmers demonstrated sufficient knowledge of key schemes such as diesel subsidies, PMFBY crop insurance, seed distribution programs, and DBT-based input assistance. In contrast, 64% of medium farmers were aware of these programs.



**Figure 2. Awareness of Agricultural Schemes by Farmer Category**

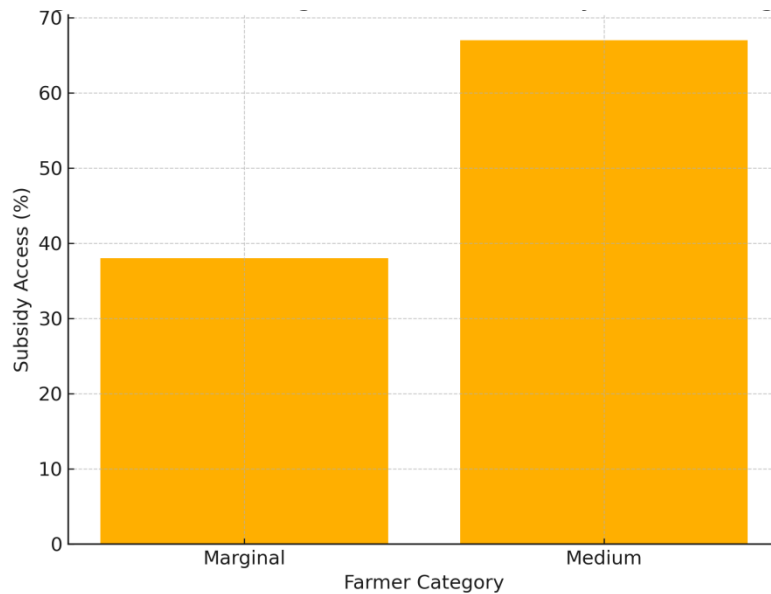
Interviews revealed that while medium farmers accessed information through PACS meetings, WhatsApp groups, and agricultural extension workers, marginal farmers relied largely on informal communication channels like fellow farmers, shopkeepers, or local Panchayat intermediaries. These sources often provided incomplete or outdated information. Several respondents described learning about a subsidy only after the application deadline had passed, highlighting systemic gaps in information dissemination.

Digital barriers further complicated awareness. Many farmers struggled with online portals or app-based notifications due to limited smartphone access or technical literacy. These findings demonstrate that policy awareness is not simply a function of education but also institutional connectivity and social capital.

## Access to Agricultural Subsidies

Access to subsidies showed noticeable disparities between different categories of farmers. While 67% of medium farmers reported receiving at least one subsidy in the past two years, only 38% of marginal farmers reported the same. Subsidies for fertilizers and certified seeds were relatively more accessible, although respondents frequently noted irregular supply and delays during peak sowing months.





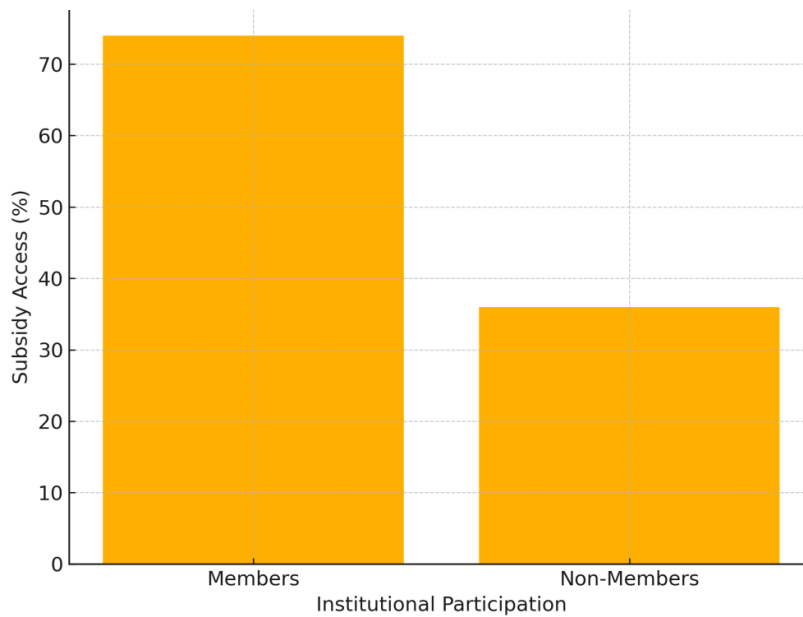
**Figure 3. Access to Agricultural Subsidies by Farmer Category**

Diesel subsidies and crop insurance remained the least utilized benefits. Farmers cited multiple obstacles: slow online systems, complex claim procedures, and inconsistent communication from administration officials. Landless sharecroppers and informal tenants—who constituted approximately a quarter of respondents—were automatically excluded from all formal DBT-based schemes due to lack of recognized tenancy rights. These findings suggest that state policies, while well-intentioned, tend to benefit farmers with larger land holdings and stronger documentation.

Moreover, some PACS representatives acknowledged that technical issues such as server failures during registration periods often led to backlogs, resulting in many applications being rejected or left pending for months. Such procedural hurdles disproportionately affect small and marginal farmers who lack the time, resources, or influence to repeatedly visit block offices.

### **Institutional Participation and Its Impact on Access**

A strong positive relationship emerged between institutional participation and subsidy access. Farmers who were members of PACS, Farmer Producer Organizations (FPOs), or Kisan Sabhas demonstrated significantly higher awareness and utilization of government schemes. Among institutional members, 74% accessed at least one subsidy, compared to only 36% of non-members.



**Figure 4. Effect of Institutional Membership on Subsidy Access**

Membership provided several advantages: clearer communication about schemes, assistance with documentation, collective bargaining, and easier access to extension services. However, institutional participation was overall low—only **22%** of all respondents were active members of any farmer organization. Women’s participation was notably minimal (8%), reflecting gendered norms that exclude women from agricultural decision-making forums.

Interviews with cooperative officials revealed that internal politics and factionalism often discouraged participation among marginalized caste groups. Some farmers described cooperatives as being “run by a few influential families,” reinforcing patterns of elite dominance.

### Elite Capture and Political Mediation in Subsidy Distribution

The results strongly indicate that agricultural governance at the village level is influenced by elite capture. Panchayat leaders, politically connected families, and better-off farmers often acted as intermediaries or gatekeepers in distributing subsidized inputs like seeds and fertilizers. Several respondents explained that subsidy applications moved faster when accompanied by recommendations from influential individuals.

Participants in focus group discussions noted that during peak seasons, PACS officials often allocated resources first to better-known or politically supported farmers. Such preferential treatment reduced transparency and contributed to the exclusion of marginal farmers.

Moreover, the presence of informal political brokerage—often in exchange for future political support—reveals how the subsidy system becomes embedded within local power structures rather than operating as an equitable welfare mechanism.

### Perceptions of Policy Effectiveness

Farmers’ perceptions varied according to their socio-economic status. Medium farmers, who accessed more subsidies, expressed comparatively higher satisfaction with seed availability and fertilizer



distribution. Marginal farmers, however, reported frustration due to irregular stock, bureaucratic delays, and the complex digital procedures associated with DBT schemes.

Across districts, the majority of farmers identified poor irrigation infrastructure as the most critical barrier to agricultural productivity. Even when subsidies were received, their effectiveness was limited in the absence of reliable irrigation. Repeated crop losses due to floods in northern Bihar and dry spells in southern Bihar exacerbated distrust toward existing policy frameworks.

These findings underscore that subsidies alone cannot resolve structural challenges unless accompanied by broader improvements in irrigation, land records, and institutional transparency.

## DISCUSSION

The findings of this study underscore the complex interplay between socio-economic status, institutional participation, political mediation, and the structural characteristics of agriculture in Bihar. When interpreted through a political economy lens, the results reveal persistent inequities in the design and functioning of agricultural governance systems. These inequities disproportionately affect marginal farmers—who represent the majority of the agrarian population—thereby reinforcing longstanding patterns of rural inequality and limited state responsiveness.

A principal finding is the low level of awareness of agricultural schemes among marginal farmers, which significantly restricts their ability to benefit from state programs. This aligns with earlier scholarship noting that policy awareness is not equitably distributed across socio-economic groups, with disadvantaged farmers often lacking timely and accurate information (Narayan & Singh, 2021; Sinha, 2019). The reliance on informal information networks further reflects what Bardhan (2021) describes as the "informational poverty trap," where households with the least resources also have the weakest access to institutional communication channels. This finding points to structural deficiencies in state outreach mechanisms, where a heavy reliance on digital platforms is incompatible with the low levels of digital literacy prevalent in rural Bihar.

The study also reveals significant disparities in subsidy access between marginal and medium farmers, confirming the argument that welfare distribution in the agricultural sector is often skewed toward those with better socio-economic standing. This pattern resonates strongly with Jha's (2021) analysis of subsidy politics in north India, which highlights how bureaucratic procedures, documentation requirements, and elite influence result in unequal resource distribution. The exclusion of landless sharecroppers from DBT-based subsidies due to lack of formal land records also mirrors findings from Sinha (2019), who argues that land titling inequalities continue to serve as a key determinant of welfare access in India.

These findings raise questions about the equity and inclusiveness of current agricultural policy frameworks. Although subsidies are designed as instruments of social protection, their operationalization often fails to reach those in greatest need. The findings suggest that policy design does not adequately account for structural constraints—such as tenancy informality, fragmented landholdings, and literacy barriers—that shape the lived realities of marginal farmers.

A particularly noteworthy result is the critical role of institutional participation in shaping agricultural outcomes. Members of PACS, Kisan Sabhas, and FPOs exhibited significantly higher levels of policy awareness and subsidy access. This supports the argument that collective action and organizational membership enhance farmers' bargaining capacity and increase their ability to navigate bureaucratic

systems (Baviskar, 2019; Deshpande & Datt, 2020). However, low membership rates—especially among marginalized caste groups and women—indicate institutional exclusion rather than inclusion. Scholars such as Mansuri and Rao (2013) have long argued that participatory institutions often reproduce existing social hierarchies unless targeted measures are adopted to ensure genuine inclusivity. The present findings suggest similar patterns: institutional spaces in Bihar are dominated by better-off and politically influential farmers, limiting the representational capacity of these bodies.

The presence of elite capture in subsidy distribution further reinforces this conclusion. The study's qualitative data reveal that local political actors, particularly Panchayat leaders and dominant caste groups, frequently influence the allocation of subsidized inputs. This mirrors the broader literature on local governance in India, which documents how decentralized institutions are often susceptible to elite capture, particularly in regions with entrenched caste hierarchies (Dubey, 2020; Brass, 2020). Elite mediation not only distorts the allocation of benefits but also erodes trust in state institutions. Several marginal farmers expressed reluctance to approach PACS officials or Panchayat members for assistance due to perceived favoritism. Such dynamics weaken accountability mechanisms and reduce the state's ability to implement schemes transparently and effectively.

Another critical dimension that emerged is the limited effectiveness of subsidies without supportive infrastructure, especially irrigation. Farmers consistently emphasized that reliable water access is more important than receiving seeds or fertilizers. The absence of irrigation facilities forces farmers—especially marginal ones—to rely heavily on monsoon rains, making them vulnerable to climate variability. These findings align with Sharma and Kumar (2020) and Government of Bihar (2022), who identify irrigation inadequacies as one of the main bottlenecks in Bihar's agricultural performance. This suggests that policy efforts should move beyond input subsidies toward structural investments that improve irrigation, flood mitigation, and drought resilience. Without such reforms, subsidies function merely as short-term relief rather than long-term development tools.

The study also brings attention to gendered dynamics in agricultural governance. Women's exclusion from institutional membership and decision-making reflects entrenched patriarchal norms that limit their access to land titles, credit, training, and government support. Kumar and Sharma (2021) argue that women's participation in agricultural institutions remains low due to socio-cultural constraints and lack of formal recognition as farmers. The present findings reinforce that women's role in agriculture—while substantial—remains undervalued in policymaking, thus requiring targeted interventions.

Overall, the discussion reveals that Bihar's agricultural policy landscape is shaped by a combination of structural limitations (land fragmentation, irrigation), administrative challenges (digital barriers, procedural delays), and socio-political factors (caste dynamics, elite capture, institutional exclusion). While the state has made significant efforts to modernize agriculture through subsidies, DBT systems, and institutional reforms, the benefits of these efforts remain unevenly distributed.

The findings of the study point toward several implications. First, policy reforms must incorporate social equity considerations, ensuring that marginal farmers receive targeted support through simplified application procedures, village-level outreach campaigns, and inclusive institutional mechanisms. Second, institutional strengthening—particularly PACS and FPOs—must prioritize representation of marginalized groups to enhance the democratic functioning of these bodies. Third, large-scale infrastructural investments, particularly in irrigation, are essential to ensure that subsidies translate into meaningful productivity gains. Fourth, decentralized monitoring mechanisms should be strengthened to prevent elite capture and ensure transparent allocation of state resources.

The study contributes to the broader literature by demonstrating that agricultural outcomes in Bihar are the product of structural, institutional, and political forces rather than purely economic factors. The findings call for a holistic policy approach that integrates welfare distribution with participatory governance, infrastructural development, and equity-driven reforms. Without such measures, agricultural policy in Bihar is likely to continue benefiting relatively privileged groups while marginal farmers remain excluded from transformative opportunities.

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