

Technology in Agriculture and Religious Conflict

Executive Summary

[submitted]

This paper examines how the introduction of new technology in agriculture, specifically the Green Revolution (GR) in India starting in 1967, affected religious conflict between Hindus and Muslims. Although ethnic and religious conflicts are often viewed as culturally driven, economic factors can play a critical role. The Green Revolution mechanized agriculture and introduced high-yielding variety (HYV) seeds that required controlled irrigation. Because districts with preexisting irrigation infrastructure were more suitable for HYV adoption, the paper uses cross-district variation in irrigation intensity as an instrument to identify the causal effect of GR on religious violence.

Using district-level agricultural and riot data from 1957 to 1985, the study employs an instrumental variable framework to address endogeneity concerns. District fixed effects control for time-invariant characteristics that affect conflict, and state-by-year fixed effects control for variations in riot patterns across states and years. The main finding is a statistically significant increase in the duration of Hindu-Muslim riots, with a 1% increase in riot length following the introduction of the Green Revolution. Though increases in riot incidence and intensity were not statistically significant, the direction of effects suggests a general rise in religious conflict after mechanization.

The study also finds that the exacerbating effect of the Green Revolution on conflict is marginally reduced in years with good rainfall, likely because better rainfall reduces economic stress. Further analysis suggests that rice-growing districts and northern regions experience more pronounced conflict increases. Political changes, such as shifts in state government, appear to heighten the conflict-inducing effects of the Green Revolution.

In terms of mechanisms, the Green Revolution reduced agricultural labor demand through mechanization, displacing rural workers and potentially increasing competition for resources, which may have triggered more prolonged conflict. The study also finds that when the Indian National Congress wins state elections, religious violence is somewhat suppressed, indicating political context moderates economic conflict channels.

Robustness checks controlling for rainfall shocks, crop variety, and geography reinforce the validity of these findings. The results highlight the unintended social consequences of introducing new agricultural technology in a stratified society, illustrating how economic transformations may fuel ethnic or religious conflict through labor market disruptions and inequality. This underscores the importance of considering socio-political outcomes when deploying technological innovations in agriculture.