



Policy Brief

Impact of APCNF on pesticide use and availability

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The Andhra Pradesh government in south India is currently implementing the world's largest agroecological programme, known as Andhra Pradesh Community-managed Natural Farming (APCNF). The programme aims to transition all 6 million farmers, cultivating 8 million hectares of land, to natural farming practices by the end of the decade. Using cross-sectional phone surveys of 858 farmers (including 149 APCNF farmers) and in-person surveys of 38 pesticides retailers in one of thirteen districts (Kurnool), researchers aimed to evaluate whether APCNF has reduced the availability and use of pesticides.

Key Findings:

After a median of 2 years, APCNF farmers were substantially less likely to report using synthetic pesticides compared to conventional farmers. Nonetheless, 49% still used pesticides on some of their land (as against 99% of conventional farmers). The continued use is likely because only 29% of APCNF farmers were exclusively practicing APCNF (eg, practicing APCNF on all of their land). Farmers who met with agricultural extension workers – either government community resource persons (CRPs/ iCRPs) or non-governmental organisations (NGOs) – more frequently were less likely to use pesticides. Two-thirds of APCNF farmers reported interacting with CRPs or iCRPs at least once per week while half of them reported interacting with NGOs at least once per week.

Conclusion: When offered a viable alternative and regular support, farmers will transition away from synthetic pesticides. However, natural farming is knowledge-intensive. It can take time for farmers to gain confidence and become proficient in these practices.

Every retailer interviewed sold insecticides, of which organophosphorus insecticides were the most common. Biopesticides were available in 34% of shops, but mechanical pest management tools such as sticky traps or pheromone traps were only available in 13% of shops. One-in-five retailers reported a decrease in pesticide sales over the past 4 years, but this was not more common amongst retailers reporting local APCNF training.

Conclusion: The APCNF programme and resultant changes in pesticide use by farmers to date have not influenced the availability or sales of pesticides by local retailers.



Recommendations:

- 1. Farmer extension services and information touchpoints:** There was a strong correlation between regular interactions with agricultural extension agents (either government or NGOs) and reductions in farmers' pesticide use. This supports the importance of investments in farmer extension services and social capital in enabling the shift towards pesticide-free cultivation. Policy measures are needed to establish and strengthen a knowledge- and skill-building ecosystem for sustainable agricultural practices. Multiple channels can be used, including government extension agents, champion farmers, farmer field schools, women's self-help groups, local input shops, start-ups, and NGOs.
- 2. Involve input shops in agroecology programmes:** All retailers in this study said they advise farmers on the use of pesticides and about one-fourth of farmers who reported an increase in pesticide use over the past 4 years cited the 'influence of retailers' as the underlying reason. Thus, the lack of involvement of pesticide retailers is a missed opportunity to inform these important stakeholders about APCNF and increase access to tools needed for natural farming practices such as biocides and mechanical pest management tools.
- 3. Strengthen regulations on the use of harmful pesticides:** A WHO Class 1b (highly hazardous) organophosphorus insecticide – monocrotophos – was the most frequently reported insecticide used by farmers and a top five best-selling product at retailers. Such highly hazardous pesticides should be withdrawn from agricultural practice to reduce harms to the community.
- 4. Obtain rigorous evidence of the impact of pesticide use on health:** High-quality research is needed to understand the health effects of pesticide exposure in India. Previous studies have demonstrated links between certain pesticides and various adverse effects, including diabetes, chronic kidney disease (CKD), and impaired child development. [The BLOOM study](#) (co-Benefits of Large-scale Organic Farming On huMan health) is an ongoing community-based, cluster randomised controlled evaluation of APCNF that aims to deepen understanding of the health effects of reducing pesticide exposure. Such evidence will inform agriculture-health convergence in the context of the Sustainable Development Goals.

For more details about this research study:

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