

Cooperative Farming as a Pathway to Sustainable Agricultural Development in Haryana

Viresh Sehrawat

Ugc Net Qualified Department of Economics

Email - viresh.sehrawat@gmail.com

Abstract

Agriculture in Haryana is increasingly showing signs of exhaustion, both economically and ecologically, as a result of the high environmental costs associated with the modern farming practices introduced during the Green Revolution of the 1960s. Today, the state's agriculture is under serious stress, facing multiple challenges such as the rising cost of inputs, fragmentation of landholdings, declining soil fertility and nutrient depletion, insufficient capital investment, excessive use of insecticides and pesticides, falling groundwater levels and volatile market conditions. Together, these factors have raised concerns about the long-term viability of agriculture as a primary economic activity in the state. The limited employment opportunities in farming further discourage younger generations from pursuing agriculture as a livelihood. The high cost of cultivation coupled with intensive resource consumption has rendered the present agricultural model both economically unsustainable and environmentally damaging. The continued fragmentation of landholdings has deepened the crisis, often pushing small and marginal farmers into debt and financial insecurity. In light of these growing challenges, there is an urgent need to review and restructure the state's agricultural framework to develop a system that is economically viable and ecologically sustainable. In this context, cooperative farming emerges as a promising alternative, capable of addressing both the economic inefficiencies and ecological concerns of Haryana's agriculture. By pooling land, labor and resources, cooperative farming can help reduce production costs, enhance productivity and promote sustainable land use practices. Moreover, it holds the potential to strengthen rural communities, foster collective responsibility and ensure equitable benefits making it a viable strategy not only for reviving rural agriculture but also for reinvigorating rural society as a whole.

Keywords: Cooperative Farming, Sustainable Agriculture, Agricultural Development, Haryana.

Introduction

The need for cooperative farming is increasingly being recognized as a viable solution to the agricultural crisis in Haryana, which is suffering from multiple adverse effects of modern, input-intensive practices. The negative impacts including groundwater depletion, soil nutrient loss, declining fertility, crop monopolization, marginalization of traditional crops, rising soil acidity and toxicity and frequent flooding have drawn the attention of researchers and policymakers. Scholars such as Kundu and Amita (2003) have voiced serious concerns about the deteriorating condition of Haryana's agriculture and the urgent necessity for structural reform.

The concept of cooperative farming is not a modern innovation; its origins can be traced back to traditional community-based agricultural systems. Historically, rural communities were

organized around collective social and economic cooperation, with members sharing resources, labor and knowledge. Farmers supported one another by sharing seeds, tools, inputs and expertise, creating a form of cooperative farming rooted in mutual dependence and community trust. In a formal sense, cooperative farming refers to a system of collective agricultural production, wherein a group of farmers jointly own and operate farmland, sharing both risks and profits. The concept took shape in nineteenth-century Europe, where farmers formed agricultural societies and cooperatives to enhance productivity and profitability through shared knowledge and collective resource management. The Rochdale Society of Equitable Pioneers, established in 1844 in Rochdale, England, is widely regarded as the first cooperative society in the world. The idea gained substantial momentum during the nineteenth and twentieth centuries, especially in communist and socialist nations such as Russia, China and Cuba, where cooperative farming was used as an instrument of social and economic transformation. In the United States, cooperative farming grew during the Great Depression of the 1930s, when struggling farmers sought collective means to withstand economic hardship. In contemporary times, cooperative farming has re-emerged as an effective production model, particularly in developing countries, to tackle challenges such as limited access to credit, technology and markets.

In India, cooperative farming has deep historical roots, having existed informally as part of traditional rural life long before the colonial period. However, as an organized economic structure, its origins date back to the British era, with the first cooperative farming society established in Maharashtra in 1906. The movement gained further strength in the **post**Independence period, receiving significant political and institutional support. The Indian National Congress, recognizing the socio-economic potential of cooperatives, strongly advocated for their promotion. At the Nagpur Session of the All India Congress Committee (AICC) in 1959, it was resolved that *“the future agrarian pattern should be that of cooperative farming in which land will be pooled for joint cultivation.”* During the 1950s and 1960s, several initiatives were launched by the Government of India to encourage cooperative farming. One of the major institutional developments was the establishment of the National Cooperative Development Corporation (NCDC) in 1963, aimed at promoting cooperative institutions across various sectors, including agriculture. However, despite these policy efforts, the movement faced several challenges that limited its success. Problems such as low farmer participation, organizational mismanagement, corruption and lack of transparency weakened the functioning of many cooperative societies, rendering the model less effective in achieving its intended goals. Nevertheless, the idea of cooperative farming remained relevant, continuing to receive policy attention and renewed efforts to strengthen its foundation.

The National Policy on Cooperatives (2002) reaffirmed the importance of promoting cooperative farming, alongside provisions for establishing Farmer Producer Organizations (FPOs) to enhance farmers' collective bargaining power. Similarly, the Model APMC Act (2003) facilitated the formation of Agricultural Produce Marketing Committees (APMCs) and farmer groups to improve market linkages. More recently, government initiatives such as the Pradhan Mantri Fasal Bima Yojana (2016) provided crop insurance to safeguard farmers against losses, while the launch of the e-National Agriculture Market (e-NAM) in the same year created a unified digital platform for transparent and competitive trading of agricultural

commodities across India. Collectively, these initiatives underscore the continuing relevance of cooperative and collective models of farming as instruments for achieving economic stability, social equity and environmental sustainability in Indian agriculture especially for states like Haryana, where traditional practices are in urgent need of renewal.

Objectives of the Study

1. To examine the trends in agriculture practices in Haryana and their impacts on the rural economy.
2. To explore the scope of cooperative farming in Haryana in order to mitigate the negative impacts of agriculture practices under Green Revolution.

Methodology

The present study is exploratory in nature and relies primarily on secondary data sources to assess the current state of agricultural practices in Haryana. For this purpose, the research draws upon a wide range of systematic and scholarly works related to key themes such as agricultural development, the Green Revolution, sustainable farming systems, cooperative movements and government initiatives promoting cooperative agriculture. These sources include books, academic journals, newspapers and doctoral dissertations that provide comprehensive insights into the subject. In addition, the study utilizes various official government publications, including the Statistical Abstracts of Haryana, Annual Reports of the Department of Agriculture, Haryana and reports on the Economics of Farming, which offer valuable statistical and policy-based data to support the analysis.

Why Cooperative Farming in Haryana?

The rationale for promoting cooperative farming is supported by a wide range of factors spanning from the farmers' economic perspective and environmental sustainability concerns to government policy objectives and consumer interests. While it may not be feasible to encompass all these diverse dimensions within the scope of the present study, particular attention is given to those factors of immediate relevance that directly relate to the issue of sustainability in Haryana's agriculture, which remains the central focus of this research.

1. Unsustainable Agricultural Practices:

Agricultural development in Haryana has led to the emergence of a distinct cropping pattern dominated by food crops, particularly rice and wheat (Amita, 2001). The emphasis on this rice-wheat system, heavily dependent on modern inputs such as high-yielding seeds, chemical fertilizers and pesticides, has resulted in the overexploitation of natural resources, especially water. This intensive input use has further contributed to the deterioration of soil health, marked by rising levels of soil acidity and alkalinity (Chaudhary & Aneja, 1991). Moreover, the increasing cost of cultivation associated with such practices has made agriculture economically less viable, posing a serious challenge to the long-term sustainability of the sector.

2. Increased Indebtedness among Farmers:

The issue of farmer indebtedness in India is deeply rooted and not a recent phenomenon. During the British colonial period, farmers were heavily dependent on moneylenders, saukars, mahajans and landlords to meet their credit needs. These intermediaries charged exorbitant interest rates, often trapping farmers in cycles of debt that many could not repay within their lifetime. According to the National Sample Survey Office (NSSO, 2013), nearly

51.9% of farmers in India are indebted, while in Haryana, the figure stands at 42.3%, reflecting the seriousness of the problem. The gravity of the situation is evident from the fact that most peasant households are caught in a persistent debt trap. The average outstanding debt per farmer is approximately ₹1,74,000 for marginal farmers, ₹3,98,000 for small farmers and ₹11,95,000 for semi-medium farmers. Furthermore, the average debt per owned acre amounts to ₹80,179, ₹1,00,380 and ₹1,43,880 for marginal, small and semi-medium farmers respectively (Jakhar & Kait, 2021). The situation continues to worsen as small and fragmented landholdings restrict farmers' production capacity and income generation, leaving them unable to repay their loans. This structural imbalance between credit dependency and agricultural productivity has made indebtedness one of the most pressing socio-economic challenges confronting Haryana's rural economy.

Declining Size of Operational Holdings

Out of the 16.2 lakh operational landholdings in Haryana, a significant 67 per cent fall under the category of small and marginal farms, while only 3 per cent constitute large holdings. The average size of landholding in the state during 2010–11 was 2.25 hectares, notably higher than the national average of 1.15 hectares. However, the average holding size has been steadily declining over time, reflecting increasing land fragmentation due to population pressure and inheritance divisions. The small size of landholdings severely restricts farmers' ability to invest in modern technologies, mechanization and advanced farming inputs, thereby limiting their potential to achieve higher productivity and profitability (Report on Haryana Agriculture and Farmers' Welfare, Indian Council of Food & Agriculture; available at: <https://agriharyana.gov.in>). According to the Agriculture Census 2015–16, this trend of diminishing land size continues to pose a major challenge to the economic sustainability of agriculture in Haryana.

Crop Failure:

Haryana, being a predominantly agricultural state, remains heavily dependent on farming for its overall economic development. However, the state's agriculture sector is highly vulnerable to natural calamities and various factors beyond the control of farmers, leading to frequent crop failures. Although crop insurance schemes have been introduced to provide relief, they often fall short of compensating the full extent of farmers' losses. According to a report by the Ministry of Agriculture and Farmers Welfare, Government of India, the average annual crop loss in Haryana was estimated at approximately 5.86 per cent during the period 2014–15 to 2018–19, with the major losses recorded in paddy, wheat and maize crops. This recurring trend underscores the need for stronger risk management mechanisms and sustainable farming strategies to safeguard farmers' livelihoods in the state.

High Costs of Inputs:

Agriculture in Haryana is increasingly burdened by the rising economic costs of agricultural inputs, which play a crucial role in determining overall farm productivity. The escalating prices of chemical fertilizers, improved seeds and pesticides, along with the rising expenses on electricity, irrigation, transportation and storage, have placed tremendous financial pressure on farmers. To meet these growing cultivation costs, many farmers are compelled to seek loans from financial institutions and private lenders, further deepening their economic vulnerability. Several factors contribute to this steady increase in input costs, including market fluctuations,

changing government policies, rising demand for agricultural commodities and dependence on external inputs. Together, these elements have made farming an increasingly cost-intensive and economically challenging occupation in the state.

1. Low Price of Agricultural Output:

The price of agricultural output plays a pivotal role in determining a farmer's economic returns and overall financial stability. In Haryana, agricultural prices are largely influenced by two major entities the market and the government both of which shape farmers' cropping decisions. However, the prices offered or fixed for certain crops often fail to match the cost of cultivation, leaving farmers with inadequate compensation for their investments. Crops that benefit from government price support mechanisms, such as the Minimum Support Price (MSP), tend to receive greater preference from farmers in subsequent seasons. Conversely, crops that lack MSP coverage or market assurance receive less attention, thereby discouraging crop diversification and promoting crop concentration most notably in wheat and rice cultivation. This policy and market-driven bias has caused a large-scale shift of fertile agricultural land from pulses, oilseeds and other diversified crops toward paddy and wheat, leading to a serious imbalance in the state's agricultural economy and in the demand–supply structure of several essential commodities. Given these dynamics, it becomes evident that the current agricultural scenario requires immediate review and strategic intervention if Haryana's agricultural sustainability is to be preserved without compromising food security and economic growth. The situation is complex, offering limited options for both farmers and policymakers to transition toward an alternative, sustainable model of farming.

The expansion of wheat and rice cultivation has not only marginalized other crops but also reduced their contribution to the state's economy and rural livelihoods. Studies of land-use patterns under the Green Revolution model during the 1980s and 1990s show a 15 per cent decline in forest cover during the 1990s (Yadav & Rai, 2001). The cropping pattern further indicates a strong bias toward the rice–wheat system, whose share in the total cropped area continued to rise steadily (Amita, 2001). Since the 1980s, this trend has reflected a shift from diversified cropping to acreage concentration in food grains, particularly rice and wheat. The ecological costs of this transition are considerable. Resource-exhaustive crops such as paddy, wheat and cotton have exerted immense pressure on natural resources, depleting groundwater, reducing soil micronutrients and undermining the long-term sustainability of the agro-ecosystem (Yadav & Rai, 2001). The pattern of irrigation use further reflects this unsustainable trajectory. The net irrigated sown area in Haryana expanded from 59.20 per cent in 1980–81 to 82.3 per cent in 2015–16, with a majority of the additional irrigation coming from groundwater extraction through tube wells. With the progress of the Green Revolution, the use of agro-chemicals and pesticides increased sharply, particularly in the high-production districts of Kurukshetra, Kaithal, Karnal, Panipat, Sonapat, Ambala, Yamunanagar, Hisar and Sirsa the core regions of intensive agricultural activity. These areas record the heaviest use of modern inputs, which has been a major factor behind the unsustainable agricultural trends in the state. By 1999–2000, the proportion of HighYielding Varieties (HYVs) in these districts reached 97.65 per cent for wheat and 64.46 per cent for rice. In the same year, the share of chemical fertilizer usage stood at 69.3 per cent, while pesticide consumption accounted for 70.8 per cent (Amita, 2001). These inputintensive practices have severely altered the quality of water and

soil health, resulting in falling groundwater levels and expanding problematic areas affected by salinity and alkalinity. The following table illustrates the status and trends of the groundwater table in Haryana between 1974 and 1994, the period marking the height of intensive agricultural activity under the Green Revolution and highlights the environmental stress that accompanied rapid agricultural expansion.

Districts	Average Water Table (meter s)		Average Annual Water table Fall (mm/year)
	1974	1994	1974-94
Ambala	6.53	11.20	234
Yamunanagar	6.70	8.69	99
Kurukshetra	8.52	16.52	400
Kaithal	7.10	9.12	101
Karnal	5.69	10.70	250
Panipat	4.73	9.80	274
Sonepat	4.51	6.59	104

(Source: Ground Water Cell, Department of Agriculture, Haryana)

Cooperative Farming as Sustainable Agriculture:

The foregoing discussion raises several critical questions regarding the sustainability of Haryana's agriculture and its long-term benefits for the farming community. The intention here is not to present cooperative farming as the sole or permanent remedy for the challenges posed by modern agricultural practices, but rather as a practical and inclusive approach to minimize the adverse effects of intensive, input-driven farming. Through cooperative models, both natural resources and farmers can benefit mutually by promoting resource efficiency, shared responsibility and collective decision-making. The concept of sustainability, which forms the core concern of this study, is explored within the broader framework of cooperatives, which operate with diverse objectives, systems and social motivations. Cooperatives whether in rural banking, dairy, poultry, fisheries, or handicrafts are designed to empower the rural population by enabling them to earn a dignified livelihood through the efficient use of locally available resources. Achieving true sustainability requires the active and meaningful participation of local communities, as their involvement ensures that development efforts are both context-sensitive and self-sustaining.

In the agricultural context, cooperative farming can take the form of joint farm management, where land and resources are used collectively for cultivation. The objectives of cooperative farming are typically realized through two distinct models joint farming and collective farming. In joint farming, individual ownership of land is retained and income is distributed based on

the value of land contributed along with other factors. In contrast, collective farming involves the pooling of land as well as other productive resources, where individual ownership rights are relinquished and income distribution is based on each member's contribution of labor rather than land ownership (Schiller, 1957). A key principle underlying cooperative farming is the collective surrender of individual decision-making authority to a common governing body formed by the members themselves. All participants agree to abide by the group's collective decisions regarding agricultural operations, input use and profit sharing (Mann, 1962). In the wider agricultural literature, cooperative farming is often discussed as an integral component of rural cooperative movements, which play a vital role in enhancing farm sustainability. Such cooperative structures strengthen the social and economic fabric of village communities, fostering a sense of collective identity, mutual trust and interdependence. This close-knit community relationship deeply embedded in the social and cultural traditions of rural life forms the true foundation of sustainable rural development, where every member contributes meaningfully to the growth and resilience of the village economy.

Measures for promoting Sustainability, Cooperative Farming and the Farmers:

a) Strengthening the village Panchayat system:

The true potential of cooperative farming can be realized only through the active support of the existing administrative and political framework, particularly by ensuring financial and administrative autonomy to the Panchayati Raj Institutions. When implemented under the guidance of Panchayats, cooperative farming can more effectively address the needs of farmers, promote sustainable agricultural practices and ensure the judicious management of natural resources. Both the Panchayats and cooperatives serve as grassroots institutions that play a pivotal role in advancing community development programmes, which aim to improve the social, economic and environmental well-being of rural populations. According to the Report of the Working Group on Panchayats and Cooperatives (1961), the village agricultural programme forms the foundation of cooperative development and therefore deserves the highest priority in rural planning and policy implementation. A strong and complementary relationship between Panchayats and cooperatives can foster an enabling environment for democratic decentralization and inclusive community development. Such collaboration ensures that agricultural growth is both participatory and sustainable, empowering rural communities to take collective responsibility for their development while preserving the ecological balance of their local environments.

b) Warehouse facilities at the village level:

Farmers in Haryana remain heavily dependent on external intermediaries, such as arhatiyas (commission agents) and middlemen, for the sale of their produce. The selling prices are largely determined by these intermediaries, leaving the farmer with little control over market decisions. This system places farmers in a highly disadvantageous position, often forcing them to sell their crops at prices below the cost of production, thereby deepening the agrarian crisis in the state. A major factor contributing to this exploitation is the lack of adequate storage and warehousing facilities at the village level. Without access to such infrastructure, farmers are compelled to sell their produce immediately after harvest, when market prices are typically low. If proper warehouse and storage facilities were available, farmers could store their produce safely and sell it later at more favorable market rates, ensuring better income and

financial security. To address this issue, village Panchayats can play a crucial role by establishing and managing community-level warehouses, enabling farmers to retain ownership of their produce until optimal prices are achieved. Such initiatives would not only reduce farmers' dependency on middlemen but also contribute to strengthening the local agricultural economy and promoting selfreliance among rural communities.

c) Agricultural Extension Centre at village level:

In the digital era, where markets, consumers, government institutions and the agricultural sector are increasingly interconnected through the internet, access to accurate and timely information has become essential for informed decision-making by farmers. Whether it is data related to weather forecasts, market prices, fertilizers, seeds, or pesticides, or updates on government policies, schemes and concessions, every piece of information carries immense value for improving farm productivity and profitability. To ensure that farmers can fully benefit from these developments, all critical agricultural information pertaining to crop planning, cultivation techniques, storage solutions and marketing strategies should be made easily available at Agricultural Extension Centres within villages. These centres can act as knowledge hubs, empowering farmers with realtime guidance and expert support to enhance decision-making at every stage of the agricultural process. Given the rapidly changing conditions in agriculture such as climate change, declining soil quality, limited water resources, rising input and fuel costs and uncertain market dynamics farmers today face greater complexity in managing their enterprises. Therefore, timely, reliable and context-specific information is vital to help them adapt to evolving challenges, maximize resource efficiency and ensure the long-term sustainability of their livelihoods.

d) Agro-Food Industry

The contemporary business environment presents diverse opportunities for farmers to utilize their resources sustainably and enhance their income levels. Among these, the expansion of the food processing industry has emerged as a key driver, significantly improving market access for agricultural produce. Acting as a link between agriculture and industry, the food processing sector not only adds value to raw farm products but also ensures better returns for farmers, particularly in the cultivation and supply of perishable commodities such as fruits, vegetables, milk and fish. Recognizing this potential, the Government of Haryana has introduced a comprehensive framework under the Haryana Agri-Business and Food Processing Policy, 2018, aimed at providing a strong policy impetus to the state's food processing sector. The policy seeks to promote value addition, infrastructure development and private sector participation, thereby facilitating the growth of agri-based enterprises. By establishing robust forward and backward linkages, the policy envisions the creation of sustainable employment opportunities throughout the entire food value chain, from production to processing and marketing. This integrated approach is designed to strengthen agricultural competitiveness, boost farmers' income and ultimately foster rural prosperity across Haryana.

(Source: *Haryana Agri-Business and Food Processing Policy, 2018* – <https://msme.haryana.gov.in/agribusiness-food-processing/>)

e) Agroforestry:

Agroforestry has emerged as one of the most sustainable and economically viable strategies to reduce the pressure on natural resources while simultaneously enhancing farmers' incomes.

It represents an integrated land-use system that combines agriculture and forestry practices, offering a stable and eco-friendly alternative for ensuring the ecological security and long-term productivity of land. To promote this approach, the Haryana Forest Department has been actively supporting farmers by distributing approximately 2.5 crore seedlings every year, free of cost, to encourage tree plantation and agroforestry practices across the state. Several model agroforestry initiatives have been developed, particularly focusing on the cultivation of poplar and eucalyptus trees in close collaboration with farmers, thereby creating a mutually beneficial partnership between the farming community and the state government

(Source: <https://haryanaforest.gov.in/agro-forestry/>). Agroforestry practices in Haryana are designed to suit the diverse agro-climatic conditions of the state, with specific models tailored to address regional environmental challenges. For instance, agroforestry on salt-affected lands has been recommended for the southwestern districts of Haryana, while biodrainage-based agroforestry is promoted in canal-irrigated and waterlogged areas to help restore soil balance. Similarly, tree-based systems for eroded and degraded lands are being encouraged to control soil erosion and improve soil health. Such region-specific agroforestry models, as highlighted by Handa, Sirohi et al. (2020), not only contribute to agricultural sustainability but also play a crucial role in conserving natural resources, enhancing biodiversity and improving climate resilience in Haryana's rural landscape.

Conclusion

The study underscores the key characteristics of Haryana's existing agricultural practices, revealing that these practices have increasingly become unsustainable and in need of urgent reassessment. The prevailing system not only exerts severe pressure on natural resources such as soil, water and biodiversity but also adversely impacts farmers' livelihoods, leading to declining farm incomes and a state of chronic indebtedness. This financial distress has, in turn, given rise to a series of economic hardships and social challenges within rural communities. At the same time, market pressures and policy inconsistencies have further complicated the situation, leaving farmers vulnerable to fluctuating prices, rising input costs and limited institutional support. Collectively, these factors have created a scenario that is neither economically viable nor socially sustainable for Haryana's rural society. In this context, cooperative farming emerges as a promising alternative capable of addressing these structural problems. If implemented with active governmental support and farmer participation, cooperative farming can offer a long-term, sustainable solution balancing ecological preservation with economic stability, while revitalizing the social fabric of rural Haryana.

REFERENCES

- Amita, 2001; Economics and Ecology of Alternative Cropping Systems in Haryana, (unpublished Ph.D. Thesis, Kurukshetra University, Kurukshetra).
- Chaudhary, M.K. & Aneja, D.R., 1991; "Impact of Green Revolution on Long-Term Sustainability of Land & Water Resources in Haryana" Indian Journal of Agricultural Economics, vol. XLVI, No. 3
- Kundu, T. R. & Amita, 2003, "Towards Sustainable Agriculture in Haryana", in Strategies for Sustainable Rural Development; ed. Surat Singh, Deep & Deep Publications, New Delhi
- Mann, H.S., 1962, Cooperative Farming and Family Farming in Punjab: A Comparative Study, (A dissertation submitted to The Ohio State University, 1962).



- NSSO, 2013; Income, Expenditure, Productive Assets and Indebtedness- Agricultural Households in India, National Sample Survey Organization
- Report of Working Group on Panchayats and Cooperatives, 1961, Ministry of Community Development and Cooperation, Government of India, New Delhi.
- Schiller, Otto, 1957, Cooperative Farming and Individual Farming on Cooperative Lines (New Delhi: All India Cooperative Union, 1957)
- Yadav, D.B.and Rai, K.N., 2001 Perspective and Prospects of Sustainable Agriculture in Haryana,
- Indian Journal of Agricultural Economics, vol. 56, No. 1, January-March, 2001
- Handa, A.K., Sirohi, Chhavi, 2020, Agroforestry in Haryana: Status and way forward, Indian Journal of Agroforestry, vol. 22, no. 1.