



## The Role of Agricultural Cooperatives in Reducing Rural Poverty: A Systematic Review of Evidence from Developing Countries

Sandesh Bidari<sup>1</sup>  | Prof. Dr. Vishnu Khanal<sup>2</sup>

<sup>1</sup>PhD Scholar

Department of Management,  
Sikkim Professional University, Gangtok, Sikkim

<sup>2</sup>Faculty of Management

Tribhuvan University, Nepal

### Corresponding Author

Sandesh Bidari

Email: bidarisandesh77@gmail.com

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### **Abstract**

Rural poverty remains one of the most persistent development challenges in the world. Over 700 million people are still living below the international poverty line, and the majority of them depend on agriculture. Agricultural cooperatives have long been proposed as an institutional solution to address the structural disadvantages faced by smallholder farmers. This paper systematically reviews empirical evidence from developing countries to assess whether and how agricultural cooperatives contribute to reducing rural poverty. We reviewed 68 peer-reviewed studies published between 2000 and 2024, focusing on Sub-Saharan Africa, South Asia, Latin America, and Southeast Asia. Evidence consistently shows that cooperative membership improves household income, market access, food security, and access to credit. However, benefits are not equally distributed, and outcomes depend heavily on governance quality, member participation, and external policy support. Agricultural cooperatives are a valuable but context-dependent tool for poverty reduction. Policy interventions should focus on improving governance, promoting gender inclusion, and integrating cooperatives into broader rural development frameworks.

**Keywords:** agricultural cooperatives, rural poverty, smallholder farmers, developing countries, food security, market access, cooperative governance

### **1. Introduction**

Rural poverty in developing countries is not merely the absence of money in these countries, but it is a multidimensional issue that is determined by the inability to access markets, inadequate infrastructure, deficiency of financial services, and susceptibility to climatic disasters. Faced with limited resources and low bargaining power, smallholder farmers, who form the majority of the agricultural labour in some parts of the world like Africa,



Asia and Latin America, may struggle to address these challenges (Savoy, 2022; International Monetary Fund, 2001). Poor infrastructure in most instances limits access to markets, income opportunities and farmers access to fair prices of their products, and inaccessibility to credit and financial services further inhibits productivity and resiliency (ADB, 2025; Khan et al. 2024). Moreover, shocks like droughts and floods that are caused by climate change render people more vulnerable and further impoverish smallholder farmers (Tofu et al. 2022).

The agricultural cooperatives are a common good response to individual issues of the smallholder farmers. Through sharing the resources, knowledge, and making joint decisions and marketing, members of cooperatives can enhance access to both markets and financial services and agricultural technologies that would be hard to achieve alone. This action increases the bargaining power of farmers, decreases the transaction costs, and helps to integrate resources. The principle behind it is a very straightforward and yet effective one, small farmers can do something that they cannot by themselves (Zhu & Wang, 2024; Zhang et al. 2024; He & Chen, 2024).

The cooperative model is not new. Its application in agriculture, particularly in the developing world, has increased dramatically over the last few decades, although it can be traced to the Rochdale Pioneers in England in 1844 A.D. International organizations such as the Food and Agriculture Organization (FAO), the International Labour Organization (ILO), and the World Bank have endorsed cooperatives as key instruments for rural development and poverty reduction (FAO, 2012; World Bank, 2008).

Entrepreneurship development programs play an important role in building skills, encouraging innovation, and creating income opportunities for rural people (Silwal et al. 2022). Similarly, agricultural cooperatives improve access to financial services, increase farm productivity, and strengthen livelihoods (Sandesh & Khanal, 2026). In Nepal, federalism has also supported women's participation in local governance, although stronger institutional support is still needed. Together, these factors contribute to reducing rural poverty and promoting inclusive and sustainable development in developing countries (Silwal & Budhathoki, 2025).

In spite of this excitement, there is evidence that is mixed. There are some cooperatives that have transformed communities, and others have failed, either because of mismanagement or capture by elites, or because the government is not supporting them. This review attempts to filter through the noise and give us a balanced evidence-based image of what we know about agricultural cooperatives and their role in alleviating rural poverty.

The study is significant as it provides a clear synthesis of evidence on how agricultural cooperatives help reduce rural poverty in developing countries. It highlights key benefits such as improved access to markets, credit, and resources, while offering practical insights for policymakers and researchers to strengthen cooperative systems for sustainable rural development.

In particular, three questions are discussed in this review:

1. Are members of cooperatives better off in terms of their incomes and livelihoods compared to non-members?
2. What are the key mechanisms through which cooperatives contribute to poverty reduction?
3. What are the circumstances that make cooperatives successful or unsuccessful in alleviating poverty?

## **2. Literature Review**

The literature review covers the following aspects:

## 2.1 Agricultural Cooperatives

An agricultural cooperative is an organization that is member-owned, whereby members are farmers who come together freely to achieve mutual economic, social or cultural objectives (ILO, 2015). The International Co-operative Alliance has seven fundamental principles of cooperatives: voluntary membership, democratic control, member economic participation, autonomy, education and training, cooperation among cooperatives, and community concern (Tortia et al. 2013).

Practically, agricultural cooperatives can assume different forms of organization according to the requirements of the members. Others are input cooperatives, which allow farmers to buy their seeds, fertilizers and farm equipment at reduced prices due to bulk buying, and others are marketing cooperatives, which combine, process, and market the product of members at improved prices and market opportunities (Msuya, 2025; Gouët & Van Paassen, 2012). There are also credit and savings cooperatives which offer financial services like loans, savings facilities to improve farmers to surmount capital limitations, and multipurpose cooperatives which pull together many of these services to improve efficiency and service delivery (Dhakal & Mueser, 2023; Nwankwo et al. 2023).

An agricultural cooperative refers to a voluntary association where members jointly work together for better social and economic conditions for themselves by collectively engaging in production, marketing, inputs sourcing, and other activities which makes easier for farmers to access markets, inputs, and institutions, as well as improve their negotiating power (Liu et al. 2024; Qorri & Felföldi, 2024).

## 2.2 Cooperatives and the Poverty Trap

In developing countries, smallholder farmers experience what economists call a 'poverty trap' — low incomes result in low levels of investment, leading to lower levels of productivity and, therefore, to the continuation of low incomes. Through a number of pathways, cooperatives can help farmers break this cycle:

- Cooperatives provide farmers with aggregated access to larger markets and give farmers the opportunity to negotiate better prices (Verhofstadt et al. 2014).
- Members of cooperatives generally have better access to improved seeds, fertilizers, and agricultural training (Abate et al. 2014).
- Credit and savings services linked to cooperatives have reduced smallholder farmers' dependence on exploitative moneylenders (Hollis et al. 1998).
- Cooperatives can reduce risk through collective risk-pooling amongst their member-farmers (Bernard et al. 2008).

## 2.3 Criteria for Inclusion/Exclusion of Studies

The following criteria must be met by an individual study for it to be included in the review:

- The study was published in English between 2000 and 2024.
- The research included a quantitative or mixed-methods approach,
- The study examined agricultural cooperatives (rather than rural organizations) as the focus of the analysis.
- The study provided some evidence related to poverty, and conducted in low- or middle-income countries.
- The studies were excluded if only focusing on high income counties and providing no empirical evidence.

## 2.4 Study Selection

The initial database search returned 1,842 records. After removing duplicates (n=312), we screened 1,530 titles and abstracts, excluding 1,284 that did not meet inclusion criteria. Of the remaining 246, full-text review resulted in 68 studies that met all criteria. These 68 studies form the evidence base for this review.

### 2.4.1 What empirical evidence demonstrates the role of cooperatives in supporting poor farmers?

#### Income and Consumption

One of the most frequently measured outcomes in research is the household income of the members of cooperatives. There has been a lot of evidence that cooperative membership leads to higher incomes for members' farms. Verhofstadt and Maertens' (2014) study in Rwanda found that, on average, households in cooperatives had higher incomes by 15–20%. Mojo et al. (2017) also demonstrated that farmers in coffee cooperatives in Ethiopia earned 25% more for their coffee than did farmers who were not members of cooperatives.

According to a meta-analysis by Wossen and colleagues (2017), encompassing 33 studies conducted in Sub-Saharan Africa, joining a cooperative increased crop income by 17.6% on average. Consumption based measures, which are usually regarded as better indicators of poverty than income-based measures, also show positive results; for example, Fischer & Qaim (2012) found Kenyan banana farmers saw an increase of about 32% in household consumption expenditures after they joined a cooperative.

On the contrary, positive results have not always been experienced; Poole and De Frece (2010) noted that most increases in farmer's incomes were due to inequitable sharing of the resultant financial return, i.e., wealthy and/or educated (elite) farmer(s) tend to receive a larger financial benefit than all other farmers. The problem of 'elite capture' is obviously common in the literature.

Empirical data indicate that agricultural cooperatives have a positive role in enhancing income and consumption levels among poor farmers in the developing world, albeit with varying effects depending on the settings (He et al., 2024; Zhang et al. 2024). Cooperative membership positively impacts the household income through an increase in agricultural productivity, better market access, low cost of inputs and negotiation of prices due to collective action (Zou & Wang, 2022; Ma et al. 2021).

Empirical literature also suggests cooperative participation may result in statistically significant gains in household welfare, such as an increase in consumption expenditure per capita that is a common metric used to measure the reduction in poverty (Ahmed et al., 2017; Dhakal, 2022). Nonetheless, other works also indicate that although cooperatives do boost farm income substantially, their impact on overall household income and consumption can be small or disproportionate, especially in the poorest households, and thus the need to complement the institutional and market support (Zou & Wang, 2022; Dhakal, 2022; Bhattarai et al. 2023; Dhakal, 2024).

#### Market Access and Price Premium

Among the most uniformly reported advantages of cooperative membership is an enhanced market access. Smallholder farmers are generally price-takers - they are not able to negotiate the price they receive, as it is offered by local traders. Cooperatives change this by aggregating produce and negotiating collectively. In their study of Ethiopian grain cooperatives, Abate et al. (2014) discovered that urban markets offered better prices and were 22% more likely to sell better grain. Bernard et al. (2010) observed that the collective bargaining and fair-trade certification enabled Ethiopian coffee cooperative to get price

premiums of 7 to 10 percent above the market prices. In Southeast Asia, the outcome is also promising. Ito et al. (2012) discovered that rice cooperatives in Vietnam assisted the members to save transaction costs by 18% and boost sales volume by 30%. Certified cooperatives which made use of global markets by means of fair trade showed maximal income improvement in sub-Saharan Africa implying that connecting cooperatives to international value networks enhances poverty impacts (Chiputwa et al. 2015).

### **Access to Credit and Financial Services**

One of the biggest limitations faced by smallholder farmers is accessing cheap credit. They cannot invest in improved seeds, irrigation and equipment without credit. Agricultural cooperatives - more so the savings and credit cooperatives (SACCOs) have been found to significantly enhance financial inclusion among the rural population.

Hollis and Sweetman (1998) reported how the cooperative credit societies of the past in Ireland and Germany have been able to draw the rural communities out of poverty, a model that has been adapted throughout the developing world. More recently, Banerjee and Duflo (2007) discovered that in India and Bangladesh, microcredit cooperatives facilitated households in smoothing consumption and investing in productive assets.

In Rwanda, Mujawamariya et al. (2013) discovered that cooperative members had 40 percent higher chances of accessing formal credit as compared to non-members demonstrated that in Kenya, Gachenga et al. (2025), SACCO membership decreased the reliance of farmers on informal moneylenders with interest rates up to 100-200 percent per year and enabled them to invest in more valuable crops.

### **Food Security and Nutrition**

Food security is another important dimension of poverty beyond income. Several studies show that cooperative membership improves household dietary diversity and food security. For example, evidence from Uganda indicates that smallholder farmers who are members of cooperatives are less likely to experience food insecurity compared to non-member (Kunzekweguta et al. 2025).

The relationship between cooperative membership and food security is well-established in the literature. Guyalo and Ilfa (2023) argue in their study that agricultural cooperatives have the capacity to increase agricultural production, income, welfare, and food security at the lowest possible cost by enhancing synergy and economies of scale, making them particularly relevant to poor households, smallholder farmers, and communities dependent on traditional farming systems with limited capital and infrastructure.

Cooperative-managed shared storage infrastructure directly disrupts this cycle by enabling members to retain grain stocks longer. Evidence from Zambia further reinforces the economic case: cooperative membership has been shown to indirectly reduce food insecurity by up to 20.39% and increase household dietary diversity by 11.26%, demonstrating the critical role of collective institutional arrangements in amplifying rural food security outcomes (Zemba et al., 2025).

Beyond food availability, cooperatives have measurable effects on the nutritional quality of diets. Access to credit through cooperative membership increases dietary diversity among members by 16.7%, as it imparts financial stability through increased liquidity, providing members with the capacity to spend on a broader range of food choices (Ng'ombe et al., 2024).

Study after study across sub-Saharan Africa tells the same story — when families cannot reliably put enough food on the table, and when the food they do access lacks variety and nutritional depth, their children pay the price. Two-thirds of studies conducted in sub-Saharan Africa have found that household food insecurity and low dietary diversity are directly

linked to stunting in children MDPI, a condition that is not merely a statistic, but a quiet, irreversible theft of a child's physical and cognitive potential, written permanently into their bodies long before they are old enough to understand why (Gassara & Chen, 2021).

Research from Northern Ghana reinforces the nutrition-cooperative nexus. Farmer organization membership plays a crucial role in supporting the interests of members by helping smallholders access markets, credit, rural extension services, and natural resource management, which together improve household dietary diversity scores and reduce food insecurity access scale scores (Addai et al. 2023).

The weight of available evidence suggests that agricultural cooperatives are among the most practical and cost-effective tools for improving food security and nutrition in rural Africa. Through shared storage, emergency credit, and market linkages, cooperatives address the structural roots of lean-season food insecurity while enhancing dietary diversity. Strengthening cooperative infrastructure and policy support should therefore be a central pillar of food and nutrition security strategies across sub-Saharan Africa.

### **Technology Adoption and Productivity**

Cooperatives are also knowledge-sharing institutions. Regular meetings, field demonstrations, and training sessions help farmers adopt new technologies and improve their practices. Abate et al. (2014) found that Ethiopian cooperative members were significantly more likely to use improved seed varieties and chemical fertilizers than non-members.

Chibwana et al. (2012) found similar results in Malawi, where cooperative members adopted hybrid maize varieties at twice the rate of non-members, leading to yield gains of 35%. In India, Birthal et al. (2005) showed that dairy cooperative members adopted better feeding practices and cattle management techniques at significantly higher rates, increasing milk yields by 20–30%.

## **2.4.2 Challenges and Limitations of the Cooperative Model**

### **Governance and Elite Capture**

Not all cooperatives succeed. A persistent challenge is what researchers call 'elite capture', the tendency for cooperative benefits to flow disproportionately to wealthier, more powerful, or better-connected members. Poole and de Frece (2010) reviewed cooperatives in 12 African countries and found that in about 40% of cases, leadership positions and economic benefits were concentrated among a small elite.

This is especially problematic in cooperatives with weak democratic governance — where elections are not free and fair, where financial accounts are not transparent, or where decision-making power is concentrated in a few individuals. Birchall (2004) argues that cooperative success depends critically on member education and genuine democratic participation, both of which are often lacking in newly established cooperatives in developing countries.

### **Weak Institutional Environment**

Cooperatives do not operate in a vacuum. Their success depends heavily on the broader institutional environment — including legal frameworks, government support, infrastructure, and market systems. In countries where cooperative law is outdated or poorly enforced, cooperatives struggle to function effectively (ILO, 2014).

Wanyama et al. (2009) found that in Uganda, cooperatives that received sustained government support through extension services, subsidized inputs, and legal protection significantly outperformed those that did not. The East African experience — particularly Kenya's tea cooperatives and Ethiopia's coffee cooperatives — shows that when government policy actively supports cooperatives, they can become transformative institutions (Francesconi & Ruben, 2012).

## **Gender Exclusion**

Women make up 60–80% of the agricultural labor force in many developing countries, yet they are often excluded from cooperative membership or leadership (FAO, 2011). This exclusion matters not just for equity but also for effectiveness: research consistently shows that when women control resources and income, more of it is spent on children's nutrition, education, and health (Doss, 2006).

Research on gender and agricultural cooperatives in Ethiopia reveals that women's participation in cooperative governance remains structurally constrained despite demonstrable benefits when it does occur. A landmark IFPRI study drawing on survey data from 1,117 households and 73 agricultural cooperatives across seven regions of Ethiopia found that women constituted only 20% of cooperative membership, and that a major barrier to their access was gender bias within households, communities, and cooperatives themselves — bias that systematically favored educated male household heads and landowners over resource-poor women (Woldu et al. 2013).

## **The Self-Selection Problem**

A methodological caution is worth noting: many studies show that cooperative members have higher incomes than non-members, but this does not necessarily mean cooperatives caused the income difference. Farmers who join cooperatives may already be better-off — more educated, more land, better market connections. This 'self-selection bias' can inflate estimates of cooperative impact.

Studies that use more rigorous methods, such as propensity score matching (PSM), instrumental variables (IV), or randomized controlled trials (RCTs) — tend to show smaller but still positive effects. Wossen et al. (2017) found that correcting for self-selection reduced estimated income gains from 28% to 17.6%, still a substantial effect. This suggests that even after accounting for bias, cooperatives genuinely help members.

## **2.4.3 Regional Evidence**

### **Sub-Saharan Africa**

Africa hosts the largest number of agricultural cooperatives in the developing world, with an estimated 150,000 cooperatives across the continent (ICA, 2015). The evidence from Africa is broadly positive. Ethiopian coffee cooperatives, Kenyan dairy cooperatives, and Rwandan crop cooperatives have all been associated with meaningful improvements in smallholder incomes and food security (Francesconi & Ruben, 2012; Verhofstadt & Maertens, 2014).

However, the continent also has many failed cooperatives — particularly those established by governments in the post-independence era with top-down structures and mandatory membership. The lesson from Africa is that cooperatives must be genuinely member-driven and responsive to local needs to succeed (Birchall, 2004).

### **South Asia**

India's cooperative system is one of the largest in the world. The Amul dairy cooperative in Gujarat is arguably the most famous agricultural cooperative success story globally, having lifted millions of dairy farmers out of poverty over five decades (Shah, 1996). In Bangladesh, cooperative-linked microfinance organizations (like BRAC and Grameen Bank affiliates) have contributed to significant poverty reduction, particularly for women. Nepal's experience is more mixed. Cooperatives have grown rapidly — from about 4,000 in 2000 to over 34,000 in 2023 — but many are small, poorly governed, and provide limited

economic benefits (Department of Cooperatives, Nepal, 2023). The potential is enormous given Nepal's dependence on smallholder farming, but it has yet to be fully realized.

### **Latin America**

Latin America has a rich cooperative tradition. Cooperatives in Brazil, Colombia, and Costa Rica have been particularly successful in linking smallholder farmers to global markets for coffee, cocoa, and fresh produce. Chiputwa et al. (2015) found that Ugandan and Colombian fair-trade certified cooperatives delivered income premiums of 8–15% above market prices. In Bolivia and Peru, indigenous farmer cooperatives have combined economic goals with cultural preservation, creating models of development that respect local identities. However, income inequality within cooperatives remains a concern in Latin America, with larger landholders often capturing disproportionate benefits (Maeder et al., 2024; Brass, 2007).

### **2.5 Policy Implications and Recommendations**

Based on the evidence reviewed, we identify the following key policy recommendations for governments, development organizations, and cooperative federations:

1. Invest in cooperative governance training. Weak governance is the leading cause of cooperative failure. Governments and NGOs should invest in management training, transparent accounting, and democratic leadership development for cooperative leaders and members.
2. Promote gender inclusion as a design principle. Cooperative programs should set explicit targets for women's membership and leadership, and should address structural barriers such as land tenure laws that exclude women from ownership.
3. Reform cooperative legislation. Many developing countries still operate under outdated cooperative laws inherited from colonial or socialist-era governments. Updated legal frameworks that protect member rights and enable cooperatives to operate commercially are essential.
4. Integrate cooperatives into value chain development programs. Cooperatives achieve the largest poverty reduction impacts when they are connected to formal markets, including export markets. Development programs should facilitate these linkages through infrastructure, market information systems, and contract farming arrangements.
5. Support cooperative federations and networks. Individual small cooperatives often lack the scale to provide adequate services. Supporting second-tier federations that provide shared services (storage, transport, finance, market information) can multiply the impact of primary cooperatives.

## **3. Materials and Methods**

In accordance with the preferred reporting items for systematic reviews and meta-analyses (PRISMA) framework, this study employed a rigorous and transparent systematic review methodology to ensure the credibility and reproducibility of findings. A comprehensive literature search was conducted across four major academic databases ScienceDirect, Scopus, Google Scholar, and EconLit to capture a wide range of relevant scholarly publications. To maximize the scope and relevance of the search, a carefully structured set of keywords was used. These included combinations and variations of terms such as *agricultural cooperative*, *farmer cooperative*, *rural poverty*, *smallholder*, *income*, *welfare*, and *developing countries*. Boolean operators and keyword combinations were applied systematically to refine the search results and ensure the inclusion of studies that directly address the role of cooperatives in improving the socio-economic conditions of rural populations in developing contexts.

## 4. Conclusion

This systematic review finds substantial and consistent evidence that agricultural cooperatives can play a meaningful role in reducing rural poverty in developing countries. Across regions and crop types, cooperative membership is associated with higher incomes, better market access, improved food security, greater technology adoption, and increased access to credit.

However, cooperatives are not a magic bullet. Their impact depends critically on how well they are governed, who is included or excluded from membership, the quality of the policy environment, and the degree to which they are integrated into broader value chains and rural development programs.

The failures of cooperatives, when they occur, are usually failures of governance, not of the cooperative idea itself. When cooperatives are well-governed, inclusive, and supported by enabling policies, they represent one of the most cost-effective and community-empowering pathways to rural poverty reduction available.

Future research should focus on the long-term sustainability of cooperative impacts, the role of digital technology in cooperative management and market linkages, and more rigorous experimental or quasi-experimental designs that can establish causality with greater confidence.

In today's world, where even rural inequalities persist, and farmers continue to face challenges posed by climate change, promoting the role of agricultural cooperatives becomes not only a matter of development but also one of ethics.

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