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The Role of Development Finance Institutions in Supporting Agricultural Cooperatives in Cambodia: A Comparative Study and the Case of Agricultural and Rural Development Bank

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Abstract

This study examines the role of Development Finance Institutions (DFIs) in supporting Agricultural Cooperatives (ACs) in Cambodia, using the country's Agricultural and Rural Development Bank (ARDB) as a case study due to its central role in financing the agricultural sector. Agricultural development has been identified as a key pillar of Cambodia's economic strategy, with the modernization of the sector among the top priorities in the government's recently launched Pentagonal Strategy Phase I. In 2024, the agricultural sector contributed 16.6% to the country's GDP and accounted for about 36% of total employment in 2023. Despite its importance, around 75% of Cambodia's 6.8 million farmers are classified as small-scale producer who face numerous challenges, including high production cost, poor infrastructure, limited access to technology, and inadequate financial support.

ACs have emerged as an essential mechanism to support the farmers. However, their operations continue to face significant barriers that limit their effectiveness and capacity, such as restricted access to loans, loan mismanagement, lack of technical and financial skills, and insufficient support from agricultural extension services. It is important to note that as part of Cambodia's Post-COVID-19 Economic Recovery Plan 2021-2023, the government has offered low-interest financing (5% - 5.5% p.a.) to farmers, ACs, agricultural traders, and small and medium enterprises (SMEs), often using DFIs as the delivery mechanisms. This has enhanced the role of DFIs in expanding funding to green businesses, promoting crop insurance, and modernizing climate change information systems.

Therefore, this study aims to assess how DFIs can strengthen ACs, promote financial inclusion, and contribute to the sustainable growth of Cambodia's agricultural sector. Using a qualitative approach, it centers on in-depth interviews with key stakeholders from ACs to understand their experiences, challenges, and expectations regarding DFI support. A comparative study and the case of the ARDB complements these insights by examining its role in financing ACs and advancing rural development. As a result, the study will (a) reveal key challenges faced by ACs in Cambodia, including limited access to finance, market constraints, and capacity gaps, and (b) highlight the role of DFIs, particularly ARDB, in addressing these issues by improving access to credit, enhancing productivity, and facilitating better market access through targeted support to cooperatives.

This research contributes to the literature by examining how ARDB supports ACs in the context of Cambodia. It offers insight into addressing key challenges faced by ACs and explores the potential of DFIs to strengthen agricultural value chains, promote financial inclusion, and enhance rural livelihoods. The findings aim to inform policy strategies and projects for more effective and sustainable agricultural development.

1. Introduction

The agricultural sector plays a vital role in global food security, economic stability, and climate resilience. However, while the sector contributes nearly one-third of global greenhouse gas emissions, it receives only 5% of public climate fund annually (Sustaincert, 2025). Shifting global agri-food systems to a pathway aligned with the 1.5 °C climate target is estimated to cost over US\$ 1.1 trillion per year until 2030, yet current climate financing remains low, estimated at only US\$ 28.5 billion in 2019/20 (CPI & FAO, 2025). Bridging this gap will require strong cooperation between public and private sectors to make agriculture more sustainable and inclusive. In line with this global shift, Cambodia has positioned agriculture as a key pillar of its economic strategy. Reflecting commitment, the modernization of agriculture is among the top priorities in Cambodia's Pentagonal Strategy Phase I, recently launched by the Royal Government of Cambodia.

Cambodia has maintained a strong macro-economic stability and robust economic growth over the past 20 years. The agricultural sector continues to play a crucial role in supporting economic growth and promoting rural development in the country. In 2024, the agricultural sector contributed 16.6% to the country's GDP and accounted for about 36% of total employment in 2023 (World Bank Group, n.d.; Trading Economics, n.d.). Despite its importance, approximately three-quarters of Cambodia's 6.8 million farmers are classified as small-scale farmers (Lohia, 2023), and they encounter multiple challenges such as high production cost, poor. In addition, the famers, especially those with farms of less than one hectare, experience vulnerability due to low productivity and difficulties in adapting with economic and weather-related shocks (World Bank, 2015). This vulnerability hampers Cambodia's ability to meet the quality and quantity demands of both domestic and export markets, leading the agricultural sector struggles to keep pace with the broader economic and social needs of the country.

To address these challenges, Agricultural Cooperatives (ACs) have become a vital support mechanism for farmers in Cambodia. They are increasingly advocated by governments, non-governmental organizations (NGOs), and researchers as a means to overcome these challenges, as they play a critical role in improving smallholder farmers' livelihoods and promoting more sustainable agricultural development by enhancing access to knowledge, skills, technology transfer, loans, financial savings, and exchange of crops and agricultural inputs (Ofori et al., 2019). Notably, under

the Agricultural Sector Master Plan 2030, ACs are a key component of the Cambodian government's efforts to reform the agricultural sector. These efforts aim to shift the traditional, subsistence-based farming system toward a more productive model that emphasizes value-added agricultural goods and strengthens the agricultural value chain in Cambodia (Chhinh et al., 2023). However, the operations of ACs in Cambodia still face significant barriers that hinder their effectiveness and capacity to deliver long-term benefits to their members. These challenges include poor management, inadequate capital accumulation, limited access to loans, loan mismanagement, a lack of technical and financial skills, low share values, and insufficient support from agricultural extension services (Chhinh et al., 2022).

In this context, Development Finance Institutions (DFIs) play a vital role in bridging financial gaps and supporting long-term development. From a broader perspective, DFIs are instrumental in fostering growth and development across key sectors of the economy, such as agriculture, manufacturing and infrastructure, especially in developing economies. The financial resources provided by DFIs are designed to supplement what the market offers and to stimulate additional investment in the economy (Ewubare & Onah, 2022). They complement the banking institutions by filling in gaps where financial products and services are lacking, especially in key areas that are critical to long-term economic growth. Additionally, DFIs are particularly important in enhancing agricultural productivity, strengthening resilience, and fostering market integration. They can improve agricultural outcomes by directly investing in farms and agribusiness within the food supply chain, promoting growth in agricultural production, increasing agribusiness efficiency, and reducing consumer costs.

It is important to note that DFIs in Cambodia have a growing role in supporting the country's post-COVID-19 pandemic economic recovery and transition toward sustainable development. During the post-COVID-19 recovery period, the government of Cambodia allocated additional funds of US\$100 million in low-interest loans to support small and medium-sized enterprise (SMEs) and agricultural businesses through state-owned policy banks such as the Agricultural and Rural Development Bank (ARDB) and Small and Medium Enterprise Bank of Cambodia (SME Bank), aiming to stabilize in key sectors, particularly agriculture (Sok, 2022).

Under Cambodia's Post-COVID-19 Economic Recovery Plan 2021-2023, the government has further encouraged investment in agriculture, diversification of

agricultural products, and improvements in irrigation and water control systems. As part of this strategy, the government offered low-interest financing (5%-5.5% p.a.) to farmers, ACs, agricultural traders, and SMEs, often working through DFIs as the delivery mechanisms (Kao, 2022). This has enhanced the role of DFIs in facilitating green recovery plan in Cambodia, particularly through expanding funding to green businesses, promoting crop insurance, and modernizing climate change information systems. As a result, the role of DFIs has been significantly enhanced in addressing Cambodia's pressing agricultural challenges, including productivity, climate resilience, and access to finance. These initiatives highlight the growing role of DFIs in supporting sustainable development, especially in agriculture; hence, a closer examination of how DFIs support ACs in Cambodia is both timely and relevant. This study focuses on the role of DFIs in supporting ACs in Cambodia, using the ARDB as a case study due to its central role in financing Cambodia's agricultural sector.

ARDB, a state-owned bank and a member of the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP), is mandated to promote agricultural and rural development in Cambodia. It supports ACs by offering accessible loans with favorable interest rates to help expand the cooperatives' operations and increase farmers' incomes. Therefore, through an in-depth analysis of ARDB's financial services and interventions, this study aims to assess how DFIs can strengthen ACs, promote financial inclusion, and contribute to the sustainable growth of Cambodia's agricultural sector. To achieve this objective, the study addresses two main research questions: (1) what are the challenges faced by agricultural cooperatives in Cambodia? and (2) What roles do DFIs, especially ARDB, play to enhance farmers' productivity and improve market access through their support to these ACs?

2. Research Methodology

This study adopts a qualitative research approach to explore the role of DFIs in supporting ACs in Cambodia. The methodology combines a desk review, key informant interviews, and a case study of the Agricultural and Rural Development Bank (ARDB). These components are designed to provide a grounded and policy-relevant analysis of how DFIs contribute to rural development and agricultural finance, particularly in the Cambodian context.

2.1. Literature Review

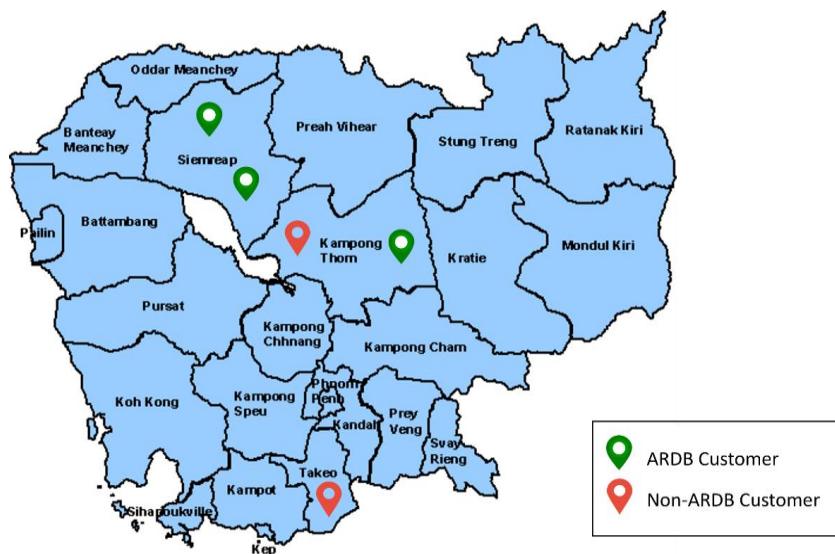
The desk review forms the foundation of the study by drawing on a wide range of secondary sources, including academic literature, government policy documents, reports from development partners, and institutional publications. This review aims to establish a comprehensive understanding of the global and regional perspectives on DFIs' involvement in agricultural development, their financial mechanisms, and their impact on cooperative performance and sustainability.

To strengthen the contextual analysis, the literature review incorporates selective comparative insights from DFI practices in countries with similar development contexts, such as Japan, South Korea, and India, which have well-established agricultural cooperative systems. These cases provide relevant insights and lessons that can inform Cambodia's cooperative development strategies and guide ARDB's institutional strengthening. The purpose of including this comparative lens is not to conduct a full comparative study, but rather to identify relevant models, challenges, and innovations that can inform the Cambodian case.

2.2. Key Informant Interviews

To complement the desk review, in-depth interviews were conducted with key stakeholders to gather field-based insights into the operations and challenges of ACs in Cambodia. The purpose of the interviews was to capture the lived experiences and perspectives of ACs regarding their governance, services, financing, market access, and capacity-building. In particular, the focus was on understanding the key challenges faced by ACs and comparing those that are ARDB customers with those that are not.

A total of five ACs were interviewed, including three ARDB customers and two non-customers. These cooperatives were selected from three provinces, including Siem Reap, Kampong Thom, and Takeo, representing variation in geographic location, crop specialization, and institutional linkages with DFIs (**Figure 1, Table 1**). Semi-structured interviews were conducted with leaders, board members, and committee members of each AC, allowing respondents to openly share their challenges, operational practices, and reflections. The interviews were conducted in August 2025, with each interview lasting approximately one to two hours.

Figure 1: Geographic Location of Interviews ACs

Source: Arranged by the author; based on National Institute of Statistic of Cambodia (n.d.)

Table 1: Overview of Interviewed ACs

No.	Agricultural Cooperatives	ARDB Affiliation	Province
1	Srauv Neang Om	ARDB-Customer	Siem Reap
2	Sosei	ARDB-Customer	Siem Reap
3	Prasat Sambo Rong Roeung	ARDB-Customer	Kampong Thom
4	Kampong Thom for Rice Crop Development	Non-ARDB customer	Kampong Thom
5	Phum Bei Mean Cheay	Non-ARDB customer	Takao

Source: Arranged by the author; based on field interviews (2025)

3. Findings from the Literature Review

3.1 Global Landscape of DFIs

Te Velde (2011) shifted the debate on how to measure the impacts of DFIs that support the private sector. While traditional assessments focused mainly on micro-level impacts, his study explored the broader, macro-level effects of DFIs in addressing global challenges such as climate change, financial crises, food and oil price swings, security threats, and the growing scarcity of water, energy, and land resources, particularly

in poor countries. He argued that DFIs have become more important over the past decades in responding to these global issues (**Table 2**). DFIs provided various forms of finance (e.g., loans, guarantees, equity) to the public sector, including institutions like the International Development Association (IDA), the International Finance Corporation (IFC), and most parts of the multilateral development banks (MDBs), especially during the global financial crisis. For example, during the 2008-2009 crisis, while international commercial banks withdrew from the long-term lending in high-risk regions, DFIs in some cases stepped in to fill the gap. The author also highlighted that DFI investment tends to be concentrated more in regions where Foreign Direct Investment (FDI) is least present (**Table 3**).

Table 2: Global challenges, macroeconomic evidence and DFI policy issues

Global challenge	Key questions from a macroeconomic perspective	Relevant macro evidence in this paper	Policy issues
Helping the poorest countries overcome financial crises by maintaining their investment rates	Are DFIs investing in poor countries? Do DFIs increase investment in recipient countries?	EIB, EBRD and IFC have the ability to promote investment and growth in poor countries.	Prepare for scaling-up of activity during crisis through more and better project preparation activities, especially in poor countries (e.g., link to G20 high-level panel on infrastructure and EU discussions on blending).
Promoting security by promoting investment in post-conflict countries	Are DFIs investing in conflict-affected countries? Do DFIs allocate more investment post-conflict?	Investment ratio is higher in post-conflict, and EIB steps up investment in post-conflict situations.	Use DFIs in post-conflict situations to promote activity. Ensure DFIs understand post-conflict investment opportunities (Create incentives for investment officers). (Link DFIs to post-conflict stabilization discussions).
Transition to a low-carbon economy	Do DFIs allocate funds to 'green sectors'? Do DFIs have a dynamic environmental effect?	EBRD and IFC are associated with greater energy efficiency.	Link DFIs to Rio+20 and EU discussions on climate finance as well as new G20 on climate finance.

Source: Arranged by authors, based on Te Velde (2011)

Table 3: FDI and DFIs' Portfolios and Changes by region, 2008-2009 (%)

	Portfolio			Change 2008-2009		
	EDFI	IFC	FDI Stock	Change in EDFI	Change in IFC	Change in FDI Stock
ACP and South Korea	28	11	11	19	3	38
South Asia	13	14	4	16	6	27
South America	11	17	16	24	-(5)	25
New EU Member States	1	3	10	-(35)	-(12)	17
South East Asia	8	7	14	32	-(4)	6
Central America	6	6	7	5	17	5
China	8	6	10	15	-(7)	25
Russia	4	7	5	7	-(19)	18
Commonwealth of Independent States	6	5	8	-(0)	35	17
Other	15	25	13			2
Total	100	100	100	14	0	16

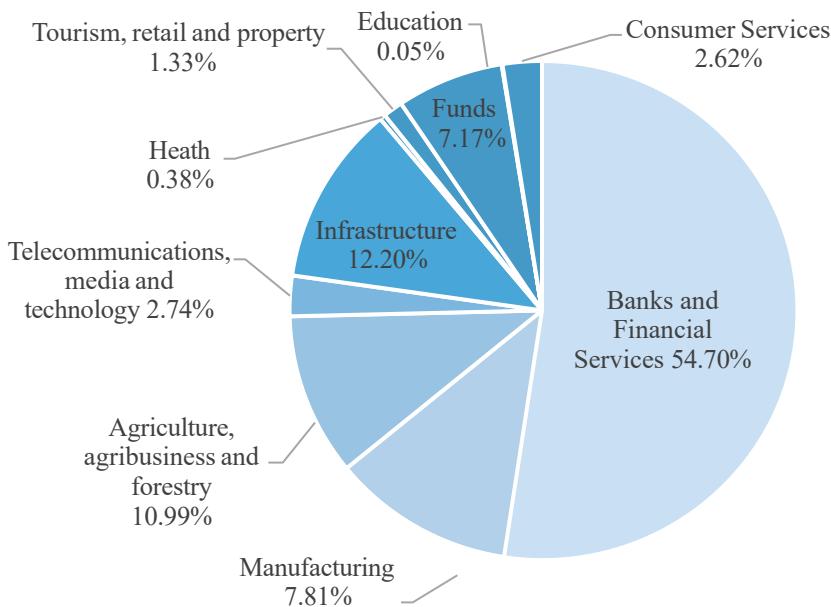
Source: Arranged by authors, based on Te Velde (2011)

3.2 DFIs and Development Impact

The role of DFIs in promoting development has remained subject of interest in many empirical studies, with many studies reporting similar findings. Kingombe et al., (2011) compare DFIs based on their aims and objectives, core activities, as well as its impacts. They argued that DFIs typically have multiple objectives, including support for sustainable private sector initiatives, the maximization of development impact, long-term financial sustainability, and the mobilization of private investment. DFIs are generally most needed in areas with limited access to capital but where private sector involvement can still be encouraged. They are especially important where market failures are severe and where their interventions can have the greatest impact. Although DFIs often focus on different countries, sectors, and financial instruments, each one usually specializes in specific areas. The study concludes that having multiple DFIs can promote innovation by encouraging a variety of approaches and ideas.

Similarly, Lemma et al. (2023) examine the role of DFIs in improving food security in vulnerable contexts, focusing on 14 countries (the 10+1 group and one region made up of three countries). They found that DFI investments can strengthen food systems along the value chain, from input supply to farming to trade, storage, processing, transport, and retail. These investments can lead to higher productivity, lower costs, cheaper food, and higher incomes for people working in food supply chains. In the 10+1 group, most DFI investments were in finance (54.7%), followed by infrastructure (12.2%), agriculture (11%), and manufacturing (7.8%) (Figure 2). In terms of food security, the study highlighted that DFI invests not only in agriculture (a directly related sector) but also infrastructure and manufacturing, which are indirectly related sectors.

Figure 2: DFI Investments by Sector, 2012-Early 2023 (% of Total \$ Millions Reported)



Note: Chart represents 78% of total investments, excluding investments for which no invested amount was disclosed.

Source: Arranged by authors, based on Lemma, Raga, Te Velde, & Wiggins (2023)

In addition, Marbuah et al. (2022) emphasizes the role of DFIs in supporting development and achieving the Sustainable Development Goals (SDGs). He argued that DFIs can play a key role in the SDG agenda, as there is evidence that they

generate both direct and indirect economic benefits, such as increased growth, productivity, and employment, often through the creation of higher-income jobs. For instance, a 1% increase in the DFI-to-GDP ratio increased average per capita income by 0.24%. The SDG framework, which focuses on economic, social, and environmental development, aligns closely with the typical impacts of DFI activities.

Attridge et al. (2019) further identify specific SDG areas where DFIs have made proven contributions, especially in job creation, energy access, and climate change, areas related to SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), and SDG 13 (climate action). Despite this positive contribution, the study also suggests that DFIs should improve their project pipelines by focusing on sectors with the greatest development potential. This could be achieved by identifying strategic sectors, discussing with key stakeholders from the private sector, other financing institutions, and the government on how DFIs can support investment in the sectors, and then investing in the target priority areas.

3.3 Role of ACs in Agricultural Development

Oliveira Junior and Wander (2022) defined the term ‘cooperatives’ by distinguishing them from commercial companies. They noted that cooperatives differ from traditional or commercial businesses in that they enable members to pursue their individual goals. Unlike profit-drive companies, cooperative are types of organization governed by specific laws and primarily focused on delivering services to their members rather than generating profit (**Table 4**). In relation to this, a report from Qaltivate (2025) stressed the potential of ACs in the agricultural developments. It was argued that ACs are vital to modern farming, enabling farmers to collaborate and achieve common goals. These cooperatives empower farmers to thrive in a competitive and resource-intensive industry through pooling resources, sharing knowledge, and accessing market collectively. Notably, this approach allows members to address challenges such as reducing reliance on intermediaries and ensuring better prices for their products.

Another study from Abdykaliyeva et al. (2025) examined the impact of ACs on economic development by reviewed successful ACs in the USA, Germany, Japan, and India. Based on an analysis of income data from cooperatives in these countries, they found that ACs in these countries play a crucial role in supporting farmers, ensuring economic stability, and fostering growth in the agricultural sector. Despite its leading role in the rural environment and local economy, particularly in the face of the challenges of globalization, sustainability, and digitalization Moral & Uclés (2022),

cooperatives must be competitive like any business. According to the survey result from Barton et al. (2011)'s study, there are three particularly critical financing challenges facing cooperatives, including (1) the need to acquire and maintain adequate equity capital, (2) the need to be profitable in order to finance much needed assets and maintain a strong balance sheet, and (3) the urgent need to provide more equity risk capital. These major challenges are the barriers for them to compete in a capitalistic and highly competitive market economy.

Table 4: Cooperatives vs. Commercial companies

Differentiation parameters	Cooperatives	Commercial companies
Goal	For economic purposes, but not for profits	For-profit
Minimum number of members to constitute the enterprise	Twenty members ¹	One entrepreneur
Objective	Provide service to members	Profit
Right to vote in decisions	Each person is entitled to one vote	The more capital, the greater voting power
Constitution of share capital	It consists of shares	The shares of the owners from it
Share transferability	Are non-transferable to third parties	Can be transferred to third parties

Source: Arranged by authors, based on Oliveira Junior & Wander (2022)

3.4 Role of DFIs in Supporting Agricultural Development

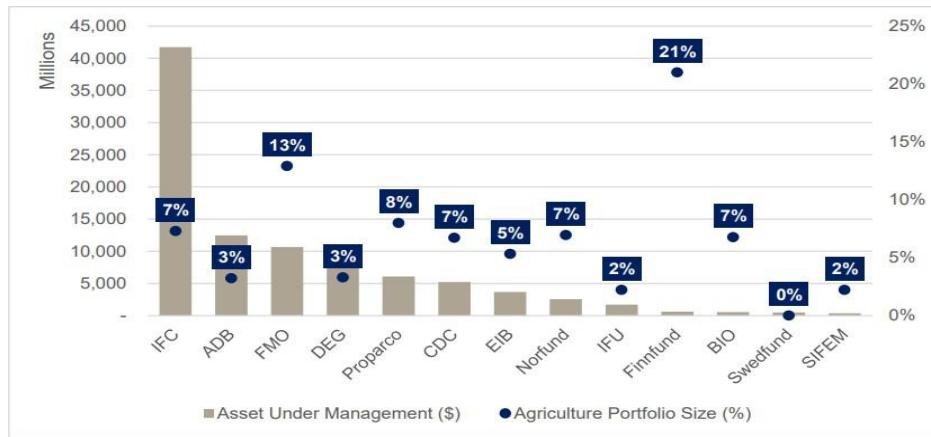
Alhassan (2024) examined the contribution of DFIs to agricultural sector development in Nigeria, focusing on key DFIs such as the African Development Bank (AfDB), World Bank, and IDA, with agricultural value added used as the measure of sector development. He argued that DFIs play a critical role in addressing key challenges in the sector, including inadequate infrastructure, limited access to modern agricultural technology, poor financing mechanisms, and insufficient policies by providing long-term financing, alongside programs aimed at building the capacity of SMEs. The study also found a positive relationship between AfDB and IDA loans and agricultural value-added. For instance, a 1% increase in AfDB loans resulted in a 0.0576% increase in agricultural value-added. Similarly, (Matoka, 2024) found that DFIs are crucial in Africa's economic transformation by

providing essential funding for sustainable projects. Major institutions like the AfDB and the IFC play a leading role in financing infrastructure, energy, and trade initiatives across the continent. Their support helps bridge the financing gap, enabling the successful completion of these vital projects.

According to Khan et al. (2024), agricultural finance is a key driver of agricultural modernization, promoting more efficient resource use and increasing overall output. However, the study noted that providing sustainable financial services in remote regions remains a major challenge in developing and underdeveloped countries, where farmers often grapple with limited access to formal credit due to various constraints. Moreover, a report from CSIS (2022) found that smallholder farmers, who make up a large share of the agricultural workforce in developing regions (Africa, Latin America, and Asia), face a US\$ 170 billion funding gap. This limits their access to essential inputs for increasing crop yields and income. The gap is primarily caused by a lack of appropriate financial products, as many local banks often view smallholders as too risky and do not operate near farming areas. As a result, many farmers rely on informal financing. In this context, Savoy suggests that DFIs can play a significant role in expanding financial services for smallholder farmers. By de-risking investments, DFIs can encourage local financial institutions to offer more credit and provide lending programs tailored to the agricultural sector.

Furthermore, providing technical assistance is also a core activity of DFIs, along with the commercial investments to improve development impact in fragmented market. A report from Commercial Agriculture for Smallholders and Agribusiness (CASA) noted that many commercial investors do not invest in agricultural projects because of the high risks perceived and lower financial returns, which has led DFIs to increasingly step in and fill this funding gap. However, due to several factors such as the lack of expertise of financial institutions in managing agricultural loan portfolios, high transaction costs to reach remote rural populations, as well as the covariance of production and market price risks, agriculture make up a small portion of DFIs' portfolios, ranging from 2% to 21%, with an average of 7%, among the leading multilateral and bilateral DFIs (CASA, 2020) (**Figure 3**).

¹ Law No. 12,690/2012 admits that worker cooperatives are made up of at least seven members.

Figure 3: Agriculture Investment as Percentage of Total DFI Portfolio, 2018

Note: The author compiled data covering primary agriculture, agro-forestry, fisheries, and food processing.

Source: Arranged by authors, based on CASA Programme (2020)

3.5 The Role of DFIs and ACs in Cambodia

ACs has been used in Cambodia as a tool for agricultural development and poverty reduction, but their history has been long, mixed, and often faced challenges. Cambodia is situated between two major agricultural countries, Thailand and Vietnam, and faces intense market competition at all levels. In this regard, ACs are essential for helping farmers adapt to changing conditions and meet challenges that individual farmer cannot address alone. They also serve as a key mechanism through which development agencies can engage and support farmers (CDRI, 2006). According to Reach & Lee (2016), the ACs in Cambodia were multipurpose ACs, involved in activities such as mutual credit, input supply (organic rice farming and trading), livestock, and handicrafts. The study also highlighted that Cambodian ACs encountered several difficulties, including problems with governance structures, the process of forming cooperatives, business-related challenges, and a lack of trust among members.

Additionally, Ngo et al. (2023) assessed ACs to inform policy on public, private, and producer partnerships (PPP) in Cambodia. The findings revealed a clear gap between high-performing ACs and others, with top ACs excelling in profit, sales, and assets. Most of the less successful ACs (about 63%) mainly offered credit services but struggled with loan defaults and buyer-related challenges. Access to external financing was a

key factor in success, though still limited. The study also highlighted that credit from the ARDB is more accessible and offered at lower interest rates, but loan sizes are smaller than those from commercial banks and MFIs. Given the critical challenges faced by ACs in Cambodia, particularly on access to financing, DFIs like ARDB play a vital role in supporting their growth and sustainability.

It is important to note that numerous previous studies have highlighted the significant role of DFIs in driving agricultural development and broader development impacts. Nevertheless, while the concept and practice of DFIs in Cambodia are still in the early stages, it is notable that there is limited research specifically examining the role and functions of DFIs in Cambodia, particularly in promoting the agricultural sector. Therefore, this research, focusing on the ARDB, aims to fill this gap by exploring how DFIs can effectively support ACs in Cambodia, enhance the agricultural value chain development, and foster rural economic growth. The expected outcomes of this study include identifying key challenges faced by ACs in Cambodia and understanding how ARDB can address these challenges. Moreover, the study is expected to provide policy recommendations for strengthening the role of DFIs in advancing sustainable growth in Cambodia's agricultural sector, promoting financial inclusion, improving cooperative performance, and contributing to increased farmer productivity and income.

3.6 Experiences from Japan, South Korea, and India

In Asia, Japan, South Korea, and India stand out as prominent case studies of effective cooperative development (**Box 1**). ACs in Asia have been strengthened by the strategic involvement of DFIs, which provide financial stability, investment capacity, and institutional backing. These three countries demonstrate how DFIs can serve as financial engines that drive cooperative growth, improve rural incomes, and support national agricultural development.

Japan and South Korea consistently ranked among the top ten largest agricultural and food industry cooperatives over the past decade (Siregar, O'Donoghue, & Whay, 2024). Moreover, India's agricultural sector has undergone a dynamic transformation since independence, evolving from traditional cooperatives to modern agri-tech enterprises, all striving to secure fair returns for rural producers. Today, these cooperatives cover nearly the entire rural landscape, reaching about 98% of rural India, and play a central role in sustaining livelihoods and strengthening the rural

economy (Babu, 2025). This highlights Asia's strategic role in shaping the global landscape of ACs.

Japan

Japanese agricultural cooperatives, collectively known as the JA Group, are among the most efficient agricultural organizations globally. Established in 1972 through a merger of marketing and purchasing federations, Zen-Noh (National Federation of Agricultural Cooperative Association) serves as the JA Group's national marketing and supply body, coordinating input provision, product distribution, and export operations (Zen-Noh, 2019.). Working closely with local JAs and prefectural federations, it promotes economies of scale and efficient logistics.

Supported by the Norinchukin Bank, the core financial institution of Japan's agricultural sector, the JA Group provides credit, insurance, and savings services to millions of members nationwide (Norinchukin Bank, 2020). The Norinchukin Bank plays a pivotal role in supporting Japan's JA system by acting as its central financial institution and reinforcing long-term sustainability for farmers and ACs. Through its retail business, the bank provides a comprehensive range of financial services via JA Bank, including savings, settlements services, loans, investments products, and trust services. These offerings enable farmers to manage day-to-day finances, fund production activities, invest in assets, and plan for estate and retirement needs. In addition to providing financial services, the Norinchukin Bank also performs a strategic function by coordinating nationwide financial policies and product development for JA Bank, strengthening liquidity management, and enhancing advisory and consulting functions (The Norinchukin Bank, n.d.).

Throughout the support from Norinchukin Bank, the JA network has evolved into an influential policy actor, shaping agricultural regulations and safeguarding farmers' interests in Japan. JAs are central to Japan's agricultural and rural development, operating on the principles of cooperation, management, and community ethics. They enhance farmers' efficiency and competitiveness through collective purchasing of agricultural materials and joint marketing, which lower production costs and strengthen market access. JAs also ensure financial stability for members by maintaining an extensive nationwide cash-flow system that prevents credit shortages and facilitates smooth transactions. Their large-scale operations generate significant economic impact, as evidenced by annual transactions with

various companies exceeding one billion yen, reflecting their scale and influence in Japan's agricultural economy (Rajaratne, 2007).

In addition, the effectiveness and resilience of JAs are substantially supported by sustained government backing, which has shaped their institutional capacity and operational reach. Notably, the Japanese government provides direct support to farmers and cooperatives through subsidies and machinery, or facility grants, strengthening JA's business operations and helping stabilize input cost (Fujibayashi, 2023). Moreover, their broad distribution networks for fertilizers, pesticides, and agricultural machinery directly contributes to productivity growth. Combined with their roles in stabilizing product prices and improving operational efficiency, JAs not only safeguard farmers' livelihoods but also promote sustainable rural development and benefit consumers through reducing production costs.

South Korea

The National Agricultural Cooperative Federation (NACF), known locally as Nonghyup, has been the backbone of South Korea's agricultural and rural development since its establishment in 1961. Its creation resulted from the merger of two major institutions, the Agricultural Bank and existing rural cooperatives, into a single multifunctional body, marking the beginning of an integrated rural finance and production system (APRACA, 2013). It is important to note that the NACF was initially established as a state-owned organization, operating under strong government supervision and serving as an implementation arm of the Ministry of Agriculture, Forestry, and Fisheries. This close linkage enabled the NACF to diversify into multiple business activities, including the supply of fertilizers and agricultural inputs, savings and loan services, consumer goods sales, and insurance provision. Eventually, the NACF evolved into a dominant cooperative enterprise in South Korea's rural economy, providing farmers with credit, managing deposits, distributing farm machinery and agro-inputs, and acting as a government agent for grain procurement (Siregar, O'Donoghue, & Whay, 2024).

The NACF has played a pivotal role in South Korea's agricultural development by integrating finance, production, and marketing under a unified cooperative framework. As both a financial institution and a commercial cooperative enterprise, the NACF connects farmers to affordable credits, input supply, and marketing services, while simultaneously implementing national agricultural policies and

serving as a policy advocate (APRACA, 2013). Additionally, it serves as the apex for 1,233 multipurpose member cooperatives in South Korea, coordinating agricultural marketing, processing, and supply operations at scale (APRACA Member's List, n.d.). As of July 2012, the NACF supported its members through 27 subsidiaries and 2 affiliated organizations, representing 2.44 million individual members, over 80% of all farmers in Korea. Overall, the NACF and its member cooperatives handle more than half of Korea's agricultural output in production regions and distribute around 20 percent of all agricultural products sold in consumer markets (ICAO, 2014).

Among its various functions, agricultural marketing and supply is the most significant business area because it directly contributes to increasing farmers' incomes. Furthermore, this integration has helped stabilize farm incomes, reduce dependency on intermediaries, and enhance rural resilience. The federation's comprehensive model and institutional scale have made it a cornerstone of Korea's rural transformation and an instructive example for countries seeking to strengthen their agricultural cooperative systems.

India

In India, specialized financial institutions play a central role in strengthening the agricultural sector by bridging financial gaps and expanding access to credit for farmers and agripreneurs. Key institutions include the Industrial Development Bank of India (IDBI), the Small Industries Development Bank of India (SIDBI), and most prominently, the National Bank for Agricultural and Rural Development (NABARD). These institutions have had a significant impact by easing funding constraints, supporting investment in agricultural production and processing, and promoting sustainable agricultural practices through improved financial access, technical assistance, and capacity development (TAgriculture Institute, 2024). Within this enabling financial environment, India's ACs have become the backbone of the rural economy, empowering millions of smallholder farmers through collective organization and value-chain integration. In a context where most farmers cultivate less than two hectares, these cooperatives allow members to pool resources, share risks, and enhance access to markets, finance, and technology, thereby enhancing rural livelihoods (Agriculture Institute, 2023).

Among these financial institutions, NABARD plays the most direct and influential role in supporting ACs and rural development in India. It provides refinance support to cooperative banks, regional rural banks, and commercial banks, enabling these institutions to extend affordable credit to the agricultural sector. In addition, NABARD offers direct lending to farmers, agripreneurs, and rural enterprises to finance agricultural production and rural development initiatives. Beyond credit provision, the bank also implements major development programs, including watershed development, micro-irrigation expansion, and rural infrastructure investment, all of which contribute to improving productivity, sustainability, and the overall resilience of India's agricultural ecosystem (NABARD, 2015.). With this enabling financial and institutional support, ACs in India have been able to expand their operations and deliver substantial economic and social benefits to rural communities. One of the most successful examples of the cooperative model is Amul, which demonstrates how strong farmers-owned organizations supported by accessible rural finance can transform an entire agricultural value chain.

Amul formally known as the Kaira District Cooperative Milk Producers' Union, was established in 1946 in response to exploitation of dairy farmers by private middlemen. The cooperative adopted a three-tier structure consisting of village-level milk collection societies, district unions responsible for processing and marketing, and state-level federations that oversee national distribution and branding (Agriculture Institute, 2023). Through this integrated structure, Amul has aggregated millions of smallholder farmers into a unified dairy value chain that manages every stage from milk collection to processing, packaging, and national marketing under the highly recognized Amul brand (Agriculture Institute, 2023). The cooperative's success is rooted in democratic and transparent governance, strong institutional support from government and development partners, and sustained investment in processing capacity and value-addition. As a result, Amul has significantly increased farmer incomes, strengthened market access, and contributed to India's emergence as the world's largest milk producer.

Taken together, India's experience demonstrates how inclusive agricultural finance and farmer-owned cooperative institutions can reinforce one another to support rural transformation. Development finance institutions, particularly NABARD, provide the credit systems, institutional capacity, and development support needed for cooperatives to scale and operate effectively. In turn, successful cooperatives such

as Amul illustrate how collective action, supported by appropriate financial infrastructure, can empower smallholder farmers, stabilize livelihoods, and drive sector-wide modernization. This mutually supportive relationship between DFIs and ACs highlights a development pathway in which finance, cooperation, and farmer empowerment jointly contribute to sustainable agricultural growth.

3.7 Lessons for Cambodia

ACs across Asia offer valuable lessons for strengthening Cambodia's cooperative movement, particularly in the areas of institutional design, financial inclusion, and value-chain development. Japan, South Korea, and India demonstrate that AC systems become most effective when they are embedded within strong enabling environments supported by DFIs, coordinated government policy, and farmer-led governance structures. In each country, DFIs have played a crucial role in expanding access to credit, stabilizing cooperative operations, and supporting long-term investment, thereby allowing ACs to scale their services and deepen their contribution to rural development.

A key strength of these models lies in their capacity to combine economic efficiency with social inclusion. These countries have shown that well-structured cooperatives not only enhance input supply and marketing efficiency but also empower farmers through access to finance, technology, and institutional networks. Japan's JA Group, supported by the Norinchukin Bank, integrates finance, marketing, and advisory functions under a unified institutional framework. Similarly, South Korea's NACF acts as both a financial institution and service federation, ensuring that farmers' production, financial, and marketing needs are addressed within one cooperative system. In India, institutions such as NABARD reinforce cooperative development by extending affordable finance and technical support, enabling successful farmer-owned models such as Amul to modernize production and compete in national markets.

Importantly, the success of these cooperative systems is also underpinned by consistent and substantial government support. Across all three countries, governments have invested in subsidy programs, price stabilization measures, infrastructure development, and institutional strengthening to reinforce cooperative capacity and ensure farmer participation. This long-term policy commitment has been essential in reducing risk, encouraging investment, and allowing ACs to operate as trusted economic and social institutions in rural areas.

Ultimately, the experiences from the three countries show that ACs are most successful when they operate as farmer-owned enterprises embedded within supportive financial and policy systems, helping rural households reduce vulnerability, increase income stability, and participate more equitably in agricultural value chains.

Box 1: Agricultural Cooperative Models in Asia

1. Japan – National Federation Cooperative Associations (Zen-Noh)

Established in 1972, Zen-Noh is one of the world's largest agricultural federations. Notably, ACs in most of countries work in a hierarchical system, but only the federation in Japan emerged as a powerful farm lobby group and an influential force in shaping agricultural policy. It provides farmers with input supplies, collective marketing, and financial services through the Norinchukin Bank. Its hierarchical structure and strong government backing have made it a powerful farm lobby (Rajaratne, 2007; Yokose & Ogata, 2022; USD, 2023).

2. South Korea – National Agricultural Cooperative Federation (The NACF or Nonghyup)

Founded in 1961, the NACF began as a state-led initiative and later transitioned into a farmer-governed federation. The NACF and its member cooperatives, as an integrated value chain finance model, have contributed remarkably to the development of Korean agriculture. They were also successful in securing financial resources for value chain finance. Moreover, it integrates farming support, input supply, marketing, insurance, and cooperative banking under a single system. This multipurpose cooperative system through the merger of former NACF and Agriculture Bank, became an important basis for the development of integrated value chain finance system. This multifunctional model has stabilized farm incomes, strengthened rural livelihoods, and supported national agricultural modernization in South Korea (Yang, 2025; APRACA, 2013).

3. India – The White Revolution Success Story (Amul Model)

Created in 1946, Amul, officially the Kaira District Cooperative Milk Producers' Union, is India's most iconic AC and the engine of the country's "white Revolution". It emerged as a response to exploitative milk traders. Amul built on a three-tier structure linking village societies, district unions, and state federations, empowering millions of smallholder farmers, many of them women, by ensuring fair prices, steady incomes, and access to veterinary and feed services.

It organizes millions of smallholder farmers into a cooperative network that manages the full value chain, from milk collection and processing to branding and marketing under the iconic Amul brand. Its success rests on democratic governance, strong institutional support, and value-added strategies that transformed India into world's largest milk producer (Agriculture Institute, 2023).

However, in Japan, although JAs have long succeeded in integrated production, marketing, and finance, they now face challenges as organization like Zen-Noh gain increasing authority and prioritize profit over member welfare. This shift has led to bureaucratization and reduced farmer autonomy, prompting calls for JA reform to remain member-driven and competitive in an evolving agricultural economy (Yokose & Ogata, 2022). Similarly, Korea's integrated value chain finance system under the NACF has been criticized for limited specialization, bureaucratic inefficiency, and slow adaptation to market changes. To address these challenges, the NACF underwent a major restructuring in 2012, legally separating its banking and financial operations from its economic and marketing functions (APRACA, 2013). India's cooperatives, meanwhile, face growing competition from private agribusinesses, shifting consumer demands, and the need for digital modernization, pressures that are compounded by climate change and the drive for sustainable practices (Agriculture Institute, 2023).

For Cambodia, these experiences suggest that cooperative development cannot rely solely on farmer organization but must also be supported by dedicated rural finance mechanisms, policy supports, and sustained institutional capacity building. Strengthening linkages between ACs and DFIs would enhance access to working capital and investment funds, allowing ACs to participate more fully in input supply, aggregation, storage, and processing. At the same time, promoting transparent governance, professional management, and federation-level coordination would improve service delivery and bargaining power. Finally, a stronger and more predictable system of public support, such as targeted subsidies, extension services, and cooperative development programs, would help reduce risks for smallholder farmers and encourage wider participation in ACs. In this regard, fostering closer collaboration between ACs and DFIs such as the ARDB could help enhance financial inclusion, ensuring timely and low-interest credit for production and marketing activities. Moreover, Cambodia could also adopt a multi-tiered cooperative structure linking local ACs to regional and national federations, enabling economies of scale and unified market access.

4. Findings from Key Informant Interviews with Agricultural Cooperatives

4.1 Overall Characteristics of ACs

To maintain participant confidentiality and clarity, each cooperative was assigned an anonymous code (AC1 to AC5). Details of the cooperatives are provided in **(Table 5)**. These codes are used throughout the findings section to attribute responses and direct quotations. The interviewed ACs are located across three provinces, including Siem Reap, Kampong Thom, and Takeo, each reflecting distinct organizational characteristics and cropping systems that shape cooperative activities. In Siem Reap, two ARDB-supported Modern Agricultural Cooperatives (MACs) were newly established, Srauv Neang Om MAC, which focuses on rice production, and Sosei MAC, which specializes in safe vegetable farming. In Kampong Thom, two MACs were included, Prasat Sambo Rong Roeung MAC, an ARDB customer specializing in cashew nut farming, and the Kampong Thom MAC for Rice Crop Development, a non-ARDB customer dedicated to rice production. In Takao, the Phum Bei Mean Chey AC, also a non-ARDB customer, focuses on safe vegetable production.

Srauv Neang Om and Sosei MACs, both established in 2024, consist of 57 and 40 farming households, respectively, managing 530 and 28 hectares of land. Notably, Srauv Neang Om is recognized as the first MAC in Cambodia, bringing together farmers with diverse but modest landholdings. Prasat Sambo Rong Roeung, also formed in 2024, is larger with about 160 farming households cultivating 700 hectares, an average of around 30 hectares per household. The Kampong Thom MAC for Rice Crop Development, founded in 2025, consist mainly of 150 large-scale farming households, holding a combined 3,400 hectares. In contrast, Phum Bei Mean Chey AC in Takeo, a traditional cooperative established in 2014, has around 340 members but a relatively small total landholding of 55 hectares, with most farmers cultivating only 6 to 10 Ares each.

When comparing ARDB customers and non-customers, distinct differences emerge. The three ARDB-supported ACs, Srauv Neang Om, Sosei, and Prasat Sambo Rong Roeung, are newly established **“Modern Agricultural Cooperatives”** that primarily bring together smallholder farmers. These cooperatives emphasize structured governance, collective input supply, and organized marketing centered around staple and high-value crops such as rice, safe vegetables, and cashew nuts. Similarly, the Kampong Thom MAC for Rice Crop Development, although not an ARDB customer,

adopts the same modern organizational model. It operates with transparent governance, collective decision-making, and a strong focus on rice production. In contrast, the Phum Bei Mean Cheay AC in Takeo represents a more traditional structure. Established in 2014, it has a large membership but relatively modest landholdings per farmer and relies more heavily on member contributions and traditional-based farming practices. This sets it apart from the four modern cooperatives, which function as more organized and economically robust agricultural enterprises.

Table 5: Membership and Landholdings of Interviewed Agricultural Cooperatives

Code	Agricultural Cooperatives	ARDB Affiliation	Year of Est.	Members	Hectares	Main Crops
AC1	Srauv Neang Om	ARDB-Customer	2024	57 households	530	Rice
AC2	Sosei	ARDB-Customer	2024	40 households	28	Safe Vegetables
AC3	Prasat Sambo Rong Roeung	ARDB-Customer	2024	160 households	700	Cashew Nuts
AC4	Kampong Thom for Rice Crop Development	Non-customer	2025	150 households	3400	Rice
AC5	Phum Bei Mean Cheay	Non-customer	2014	340 farmers	55	Safe Vegetables

Note: For the first four ACs, members are counted as farming households; for Phum Bei Mean Cheay, members are counted as individual farmers.

Source: Arranged by the author, based on field interviews (2025)

4.2 Governance and Structure

The five ACs demonstrate different levels of governance capacity and organizational maturity (**Table 6**). MACs such as **AC1-AC4** have more formalized governance frameworks, including regular general assemblies, elected leadership, and established reporting mechanisms to both members and local authorities. These cooperatives typically follow transparent voting procedures and produce annual financial and activity reports, reflecting stronger alignment with cooperative principles. For instance, **AC1** and **AC2** hold monthly board and committee meetings, with additional meetings convened as needed. **AC3** meets two to four times monthly, involving both committees and boards in decision-making, **AC4** follows a similar pattern, with regular board and member meetings. **AC5**, in contrast, follows a more routine pattern, with committee

meetings on the fifth day of each month and extraordinary meetings arranged when necessary. While **AC1-AC4** rely on structured voting with boards or committee, **AC5** leans more on its president or supervisory committee for urgent decisions.

Notably, leadership across the interviewed ACs is generally elected by members. **AC1-AC4** select leaders during general assemblies, ensuring collective decision-making and reinforcing accountability and transparency, hallmarks of the modern cooperative model. **AC5** follows a slightly different process, where members elect the cooperative head, who then appoints five board members. Although this still involves member participation, decision-making authority tends to be more concentrated at the leadership level. Furthermore, government involvement, including oversight from local authorities, the Provincial Department of Agriculture, or relevant ministries, is common across ACs. This external participation enhances legitimacy and ensures alignment with national cooperative standards, while also reinforcing the connection between ACs and state institutions.

All five ACs maintain reporting mechanisms, though levels of detail and standardization vary. **AC1- AC3** report activities and finances to both members and authorities. For example, **AC1** employs a step-by-step internal reporting system. Farmers raise concerns to the cooperative head, who consolidates and presents them to the board. The board then reviews and brings the matters back to the members for decisions, ensuring that member voices shape cooperative actions. **AC4** uses similar practice, reporting internally and externally. **AC5** also submits reports to the local authorities but relies more heavily on its leadership for internal communication, resulting in less direct member involvement.

In summary, **AC1-AC4** emphasize structured reporting that connects farmer concerns with cooperative leadership and external oversight, thereby fostering both internal and external accountability. However, **AC5**'s internal dynamics limit farmer engagement, with reporting and decision-making more centralized within leadership bodies.

Across the five cooperatives, ARDB-supported ACs (**AC1-AC3**) generally show stronger organizational discipline and documentation practices, reflecting compliance requirements linked to loan eligibility. By contrast, non-ARDB customers ACs such as **AC4** and **AC5** display looser structures, **AC4** still maintains regular meetings but less institutional oversight, while **AC5**'s decision-making remains largely centralized

under its head. This highlights ARDB's indirect role in promoting governance formalization through financial engagement.

Table 6: Summary of Governance Characteristics Across the Five ACs

AC Code	ARDB Customer	Leadership Selection	Meeting Frequency	Decision Making	Reporting system	Key Features
AC1	Yes	Member Elections	Monthly board and committee meetings	Collective, structured voting	Regular reporting to members and the Ministry	Transparent, well-structured governance; active member engagement
AC2	Yes	Member Elections	Monthly board and committee meetings	Collective, structured voting	Regular reporting to members and the Ministry	Transparent, well-structured governance; active member engagement
AC3	Yes	Member Elections	2-4 meetings per month (board and committees)	Collective, structured voting	Regular reporting to members and the Ministry	Transparent, well-structured governance; active member engagement
AC4	No	Member Elections	Regular board and member meetings	Collective, structured voting	Regular reporting to members and the Ministry	Transparent, well-structured governance; active member engagement
AC5	No	Members elect head, who appoints board members	Monthly committee meetings and additional meetings as needed	Centralized under head of the AC/supervisory committee	Reports mainly through leaders to authorities	Traditional structure, limited member involvement

Source: Arranged by the author, based on field interviews (2025)

4.3 Services to Members and Operational Functions

All five ACs provide input supply services to their members, though the type and quality of support differ (**Table 7**). AC1 organizes joint purchases of fertilizers and pesticides, securing bulk discounts, and it also offers machinery rental services. As respondent (AC1) explained, *“When we bought fertilizer in bulk (58 tons at once), we got a cheaper price compared to individual farmers. The difference could be about 20, 000 Riel per ton.”* compared to individual farmers. Tractor services are similarly more affordable when arranged through the cooperative.

AC2 provides fertilizers, seeds, and other inputs directly from suppliers at reasonable prices for all members. **AC3** offers both organic and chemical fertilizers, along with extension services to guide proper usage. In addition, **AC3** also participate in cost-sharing such as the Cambodia Agricultural Sector Diversification Project (CASDP), where the project covers 40% of the costs and farmers contribute the remaining 60%. This reduces the financial burden on members and promotes the adoption of improved agricultural practices. However, **AC3** does not yet supply cashew seedlings collectively due to high costs. **AC4** supplies seeds, fertilizers, and pesticides at prices lower than the market rate. It also benefits from technical training provided by input-supply companies. Similarly, **AC5** purchase fertilizers and pesticides in bulk to resell to members, improving accessibility and lowering costs.

Table 7: Services Provided by Agricultural Cooperatives

AC Code	ARDB Customer	Input Supply	Collective Marketing	Finance	Training
AC1	Yes	✓	✓	x	✓
AC2	Yes	✓	✓	x	✓
AC3	Yes	✓	✓	x	✓
AC4	No	✓	✓	x	✓
AC5	No	✓	X	✓	✓

Note: ✓ = Service provided, x = Service not provided. AC5 provides reselling instead of collective marketing, and its training activities are mainly ad hoc.

Source: Arranged by author, based on field interviews (2025)

Collective marketing and product aggregation are key activities among the cooperatives. Most, except **AC5**, actively organize collective marketing efforts. **AC1** sells rice collectively, requiring all members to coordinate with the cooperative in joint sales. Likewise, **AC2** also engages in collective selling of vegetables. **AC3** aggregates and markets cashew nuts through contracts with processing companies, ensuring stable sales channels. **AC4** facilitates collective rice sales under a contract-based system, farmers sign agreements to sell their rice to the cooperative, which then contract with rice mills to supply in bulk. Notably, farmers are responsible for delivering the paddy rice to the cooperative. This collective approach enables better prices and reduces the risks associated with individual sales. In contrast, **AC5** does not organize product aggregation. Instead, it purchases rice directly from farmers

and resells it to middlemen at a slightly higher price, operating more like a trader than a marketing cooperative.

However, financial services remain limited across the five ACs, particularly among the MACs (**AC1-AC4**). While these cooperatives may offer dividends (as in **AC1**) or cost-sharing mechanisms for inputs supplies, none provide formal savings or credit services. The exception is **AC5**, the traditional cooperative, which actively provides credit to its members at interest rates lower than those of commercial banks. **AC5** considers its credit services an essential safety net and a source of working capital for farmers. This contrast highlights a structural gap. Although MACs are more advanced in governance, marketing, and input supply, they lag in financial intermediation. Traditional cooperatives like **AC5** continue to fulfill this role, illustrating that financial services remain a critical function and source of income for many cooperatives.

Notably, ARDB-supported ACs (**AC1-AC3**) place stronger emphasis on collective input supply and joint marketing, while non-customers show uneven service performance. For instance, **AC4** mirrors modern practices with contract-based marketing but operates without financial intermediation, whereas **AC5**, though active in credit provision, depends heavily on external aid and lacks integration into collective sales networks. These patterns underline how ARDB's financial linkage strengthens both service coordination and farmers-market connectivity.

4.4 Capacity Building and Technical Assistance

Training and capacity-building activities vary across the cooperatives, reflecting different levels of support from government and external partners (**Table 8**). **AC1** and **AC2** report frequent participation in technical training sessions and skill-building workshops, typically organized by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and its line departments. However, **AC1** highlighted a key challenge: while many sessions are provided, farmers often struggle to absorb and apply the content due to their limited prior knowledge. As a result, technical gaps persist despite repeated training.

AC3 stands out for its more diversified access to training. In addition to government-provided sessions, its members benefit from collaborations with NGOs (e.g. GIZ), private sector actors, and local authorities. This broader network allows **AC3** to tailor training more effectively to its members' needs. While **AC4** also engages in technical and capacity-building sessions organized by the Ministry, it relies

primarily on external sources, similar to **AC1** and **AC2**. Its training remains externally driven, with limited internal coordination or customization. **AC5** follows a similar pattern, as it does not organize internal training either. Instead, its members depend entirely on opportunities offered by external partners such as private companies, NGOs, and government initiatives.

Table 8: Capacity Building and Technical Assistance among ACs

AC Code	ARDB Customers	Training Providers	Frequency/Type	Relevant and Key Issues
AC1	Yes	MAFF, line departments	Regular government training	Farmers struggle to absorb and apply knowledge, training often too general for local needs
AC2	Yes	MAFF, line departments	Regular government training	Farmers struggle to absorb and apply knowledge, training often too general for local needs
AC3	Yes	MAFF, GIZ, CASDP, NGOs	Regular government training	Training better aligned with local needs, improved adoption of cashew farming techniques
AC4	No	MAFF, line departments	Regular government training	Externally driven, lacks internal organization
AC5	No	NGOs, private firms	Irregular, ad hoc	Externally driven, lacks systematic capacity building, training not tailored to member's needs

Source: Arranged by author; based on field interviews (2025)

Overall, despite the breath of training opportunities, their relevance to farmers' needs varies. MACs like **AC1-AC4** typically receive standardized training opportunities from government departments, which contribute to addressing the farmers' challenges but have a limited impact on the specific issues they face in daily production. For example, **AC1**'s members continue to struggle with applying technical knowledge despite frequent training, suggesting a mismatch between program design and local learning capacity. By contrast, **AC3**'s access to more

diversified technical training and cost-sharing programs aligned better with member needs. As respondent (AC3) highlighted that “*Training provided by the government, especially from Cashew nut Association of Cambodia and other ACs-supported initiatives, enable uptake of improved farmers’ cashew cultivation techniques.*” Furthermore, **AC5**’s experience highlights another issue, while most training is available from external partners, it is irregular and not tailored to members’ farming conditions, leaving critical gaps in capacity development.

ARDB-supported ACs also tend to receive more structured and recurring training opportunities tied to their financial arrangements. These sessions often coincide with project-linked requirements, enhancing consistency even when content delivery remains generic. Conversely, non-ARDB customers ACs rely on ad hoc training from NGOs or line departments, which, though beneficial, lack sustained follow-up or alignment with operational priorities.

4.5 Access to Finance

Access to finance remains a central challenge shaping the growth and sustainability of the ACs. The five interviewed ACs received different rates of interest (**Table 9**). **AC1**, **AC2**, and **AC3**, all ARDB-customers, have been accessed loans or received support from ARDB, with interest rates ranging between 6-7% (including the Credit Guarantee Corporation of Cambodia (CGCC) fee). **AC1** described the process as relatively easy, noting that maintaining proper records and submitting documents on time facilitated faster loan approval. Respondent (AC1) noted, “*Submitting application documents was easy because the cooperative keeps proper reports.*” In contrast, **AC2** and **AC3** found the loan application process more complicated. **AC2** struggled due to limited experience in preparing loan documents, despite support from ARDB staff. **AC3** faced challenges related to extensive paperwork, collateral requirements, and additional CGCC fees: “*Many documents were required, procedures felt complicated, and additional CGCC fee make the interest rate higher.*”

Among the two non-customer cooperatives, **AC4** accessed finance through the Foreign Trade Bank of Cambodia (FTB) at an interest rate of about 7% (including a 0.25% CGCC fee) (**Table 6**). While the loan terms were considered acceptable, physical access posed a major issue. A respondent from (AC4) stated, “*There is no difficulty in the loan application process, but transactions are more complicated,*” elaborating that they must travel from Kampong Thom province to Phnom Penh

to withdraw or deposit funds due to the absence of local bank branches, mobile units, and ATMs. Meanwhile, **AC5** has not taken loans from ARDB or any DFIs, relying instead on internal credit services and income generated from selling the cooperative's products.

Table 9: Agricultural Cooperatives—Main Crops, Loan Sources, and Interest Rates

AC Code	Agricultural Cooperatives	Main Crops	Loan Source	Interest Rate
AC1	Srauv Neang Om	Rice	ARDB	7%
AC2	Sosei	Safe Vegetables	ARDB	7%
AC3	Prasat Sambo Rong Roeung	Cashew Nuts	ARDB	7%
AC4	Kampong Thom for Rice Crop Development	Rice	FTB	7%
AC5	Phum Bei Mean Cheay	Safe Vegetables	N/A	N/A

Note: AC5 currently does not receive loans or engage with any DFI; therefore, loan source and interest rate are marked as N/A.

Source: Arranged by author; based on field interviews (2025)

The utilization of financial resources among cooperatives reflects diverse operational priorities and capacities. For instance, **AC1** allocates loans for inputs and purchasing paddy rice from members, requiring all farmers to sell through the cooperative. **AC2** directs part of its loan toward building storage facilities and net house for safe vegetables, while **AC3** uses financing to cover inputs and labor costs for cashew farming. **AC4** uses its loan to strengthen liquidity and ensure timely payments to farmers. However, the traditional cooperative **AC5** does not rely on bank loans, citing “no current need” and continues to operate through member contributions and internal credit.

Nonetheless, the effective use of loans is often hindered by structural and procedural barriers that limit access to affordable finance. Key constraints emerge among both ARDB-customer and non-customers. ARDB-supported ACs face challenges such as extensive documentation requirements, lengthy approval times, and added costs from CGCC fees. For instance, **AC3** emphasized difficulties with collateral, citing “*Problems related to land documentation and additional CGCC fees for short-term loans,*” while **AC2** continue to face a steep learning curve in preparing applications.

For non-ARDB customers, **AC4** struggles with physical access barriers due to distance from financial institutions, making transactions time-consuming and costly. **AC5**'s lack of engagement with DFIs reflects both low demand and limited awareness of ARDB's broader credit programs and other ACs-supported initiatives.

4.6 Access to Market

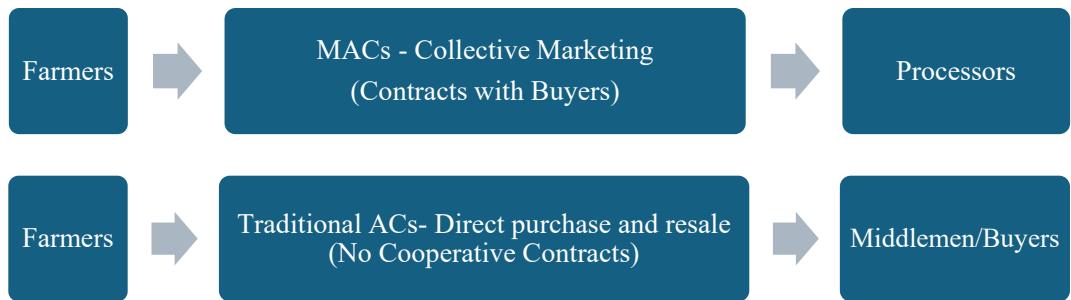
Access to market involves the ability of cooperatives and their members to physically deliver products to buyers and effectively navigate market systems. For instance, **AC1** uses loan funds to purchase paddy rice and sells it collectively, while **AC2** channels resources into safe vegetable marketing. **AC3** secures farming arrangements with processing companies for cashew nut sales. These market strategies reduce farmers' reliance on individual sales, strengthen bargaining power, and provide reliable sales channels. As respondent (AC1) stated that "*I believe that agriculture is always linked to commerce,*" reflecting the importance of business connections for sustainable sales and stronger market linkages.

Similarly, **AC4** has adopted a contract-based rice marketing model. Farmers sign contracts to sell the paddy rice to the cooperative, which in turn contracts with rice mills. This dual-contract system secures stable markets for both farmers and the cooperative. However, **AC5** operates differently; it does not organize collective sales between members and the cooperative. Instead, farmers sell individually to the cooperative without binding contracts. The cooperative may then contract directly with companies to resell the purchased paddy rice or safe vegetables. As respondent (AC5) noted, "*If the rice's market price is 1,200 Riel/ kg, the cooperative would offer 1,000- 1,100 Riel/kg to farmers.*" While this provides an alternative sales channel, it does not integrate farmers into a collective contract system, limiting their involvement in structured-market linkages.

This distinction highlights the contrast between collective marketing channels, which rely on contracts and product aggregation, and traditional sale channels based on direct, ad hoc transactions (See **Figure 4 for network diagram**). Additionally, access to finance plays a critical role in linking cooperatives to markets. ARDB-supported ACs (**AC1-AC3**) demonstrate stronger integration of finance and collective sales mechanisms, while non-customer **AC4** achieves this through commercial bank loans. These cooperatives leverage loans to reinforce collective marketing structures by linking members to buyers through contracts and pre-finance purchasing. This integration has also increased their credibility with traders

and buyers. Meanwhile, **AC5**, as a traditional cooperative, remains outside of collective marketing systems and relies on direct purchase and resale, which improves liquidity but limits integration into formal market channels.

Figure 4: Collective Marketing Model of MACs Vs. Traditional Cooperatives



Source: Arranged by author, based on field interviews (2025)

4.7 Key Challenges of ACs in Cambodia

Human resource shortages and limited technical capacity remain persistent issues across the cooperatives. **AC1**, **AC2**, and **AC5** all face challenges related to farmer's limited technical knowledge, many members do not fully understand or apply training content, which undermines effectiveness. As **AC1** noted, '*farmers cannot yet grasp the technical aspects well enough, so decisions are difficult without hiring external staff*', creating additional financial burdens as hiring increases salary expenditures. Likewise, **AC2** reported that being newly established has left it short on staff and technical expertise.

Infrastructure gaps further constrain operations. **AC2** pointed to high costs for water and electricity systems, while **AC3** lacks vehicles and storage facilities for cashew nuts. **AC5** faces compounded challenges, not only limited machinery such as tractors, but also a shortage of capable technical personnel. As respondent (AC5) explained, "*the cooperative struggles to find members who know how to use computers or prepare proper reports such as financial statements*," leaving essential management functions underdeveloped. These findings show that although training opportunities are frequent, they are often mismatched with members' learning capacities and actual operational needs.

Access to finance remain uneven across the cooperatives. **AC1**, an ARDB customer, reported no major problems due to stable loan access and project grants. However,

AC2 and **AC3** both emphasized difficulty in obtaining credit. **AC3** remarked, “*It’s difficult because disbursements are slow,*” underscoring procedural delays. Non-customer **AC4** also reported a similar problem, noting that “*The ARDB loan application process is slow,*” highlighting outreach barriers beyond direct ARDB clients. **AC5** stated that “*access to funds and credit is insufficient,*” as it continues to rely heavily on internal contributions and limited capital. Interest rates are another concern, **AC3** criticized high borrowing costs compounded by CGCC service fees, while **AC1** observed that 6% rate was acceptable but still higher than comparable programs in other countries.

Market challenges vary widely. **AC1** and **AC2** reported relatively smooth operations, though **AC1** encountered obstacle in selling to supermarkets due to additional fees, opting instead for online and direct marketing channels. **AC3**, focusing on cashew nuts, faces greater difficulties, including limited export opportunities, weak bargaining power, and competition from large middlemen who offer higher prices and often divert farmers away from the cooperative. Climate shocks further amplify these issues by reducing yields and increasing production costs. **AC4** faces contractual problems with rice mills; when price disputes arise under tripartite contracts among farmers, the cooperative, and rice mills, there is “*no proper dispute resolution mechanism.*” **AC5**, though able to sell to Vietnamese buyers, remain vulnerable to cross-border price volatility and competition from middlemen, as well as fluctuating seedling prices from Vietnam.

While ARDB customers generally benefit from stronger institutional support from the MAFF, they still face procedural burdens. **AC2** described bureaucratic complexity that slows progress, and **AC1** noted minor but manageable administrative hurdles with district offices. In contrast, **AC4** and **AC5** reported few formal regulatory issues but remained constrained by limited resources and unstable market conditions.

Overall, several recurring challenges emerge across the five ACs. **Training and technical capacity** remain weak, particularly among **AC1** and **AC2**, where farmers struggle to apply new techniques without additional staff support. Although training sessions are common, they are rarely tailored to farmer needs, leaving persistent knowledge gaps. **Infrastructure constraints** further compound these issues, **AC2** and **AC3** lack adequate water systems, vehicles, and storage facilities, while **AC5** struggles with limited farming and delivery machinery.

Finance and market-related challenges also differ between ARDB customers and non-customers. ARDB-supported cooperatives (**AC1-AC3**) experience fewer financial shortages but face administrative delays, high interests due to CGCC fees, and training mismatches that limit technical capacity. Their market access is relatively strong for rice and vegetable products but fragile for cashew nuts, where middlemen possess greater bargaining power and climate risks remain severe. Non-customer (**AC4 and AC5**) face even greater difficulties in both finance and market reliability. **AC4** struggles with ARDB's outreach, relied on other commercial banks, and experiences contract disputes with rice mills. **AC5** depends almost entirely on internal capital and faces tough competition from Vietnamese traders, exposing its members to unstable prices.

In summary, while ARDB support has helped alleviate capital shortages and improve resilience among some cooperatives, both ARDB customers and non-customers continue to face major challenges related to infrastructure, training effectiveness, and market stability.

5. Discussions and Implications

5.1 ACs in Cambodia: Progress and Issues

ACs in Cambodia have expanded rapidly since the adoption of the Law on Agricultural Cooperatives (2013). As of 2024, more than 1,300 ACs are registered nationwide, primarily engaged in rice, vegetable, and livestock production (ASEAN Sectoral Working Group on Agricultural Cooperatives, 2018). Despite this growth, both literature review and field interviews reveal persistent structural and operational challenges. Access to finance remains the most pressing limitation. Studies show that most cooperatives lack land titles or collateral, making them ineligible for bank and microfinance loans. Cooperative leaders also tend to have low financial literacy and limited experience with documentation (FAO, 2023; Léon, 2025). Interviews findings confirm this situation, **AC1-AC3** obtained ARDB loans at 6-7% interest, but only after navigating heavy documentation requirements and delayed disbursement process. **AC1** succeeded due to strong recordkeeping, while **AC4**, although borrowing from a FTB rather than ARDB, faced similar bureaucratic hurdles. **AC5** remains excluded altogether, relying solely on internal member contributions. These findings suggest that while ARDB loans can improve reporting

and governance, excessive administrative procedures discourage newer or less experienced cooperatives.

Finance also plays an important role in enabling collective marketing and aggregation. The literature emphasizes that ACs often remain dependent on middlemen, resulting in unfavorable farmgate prices (ASEAN Sectoral Working Group on Agricultural Cooperatives, 2018). Interview evidence demonstrates that access to financing improves marketing capacity. For example, **AC1** uses ARDB loans to purchase paddy rice from farmers and sell it in bulk, **AC2** coordinates vegetable marketing, and **AC3** contracts with processing companies for cashew sales. Similarly, **AC4**, using a commercial loan, manages a dual-contracts model linking farmers, cooperatives, and rice mills. In contrast, **AC5** operates outside collective contracts, farmers sell individually to the cooperative, which then resells externally. This approach limits farmers integration into structured value chains and exposes them to price volatility. The comparison illustrates how access to finance enables cooperatives to formalize marketing channels, build buyer trust, and reduce reliance on intermediaries.

Infrastructure constraints further exacerbate financial and marketing challenges. Many ACs lack essential facilities such as storage units, drying equipment, and cold chains, resulting in high post-harvest losses. Poor road connectivity raises transportation costs and restricts access to markets. Digital inclusion also remains low, with few cooperatives utilizing ICT tools for recordkeeping, marketing, or financial management (ASEAN Secretariat, 2018). Moreover, environmental risks, including floods, droughts, and climate variability, continue to disrupt production, and Cambodia still lacks a national crop insurance program, unlike countries where DFIs play a central role in climate risk mitigation. Finally, trust and perception issues persist. Past mismanagement in some cooperatives has led to member disillusionment and skepticism toward cooperative structures and financial institutions (Léon, 2025). These interlinked challenges underscore the need for a comprehensive strategy to strengthen the financial, institutional, and technical capacities of Cambodian ACs.

Capacity building and technical assistance are present but uneven in quality and impact. Government line departments, projects such as CASDP, and NGOs like GIZ provide regular training, while ARDB complements these efforts through financial literacy programs, mobile banking promotion, and workshops on contract farming and value chains. However, interview findings indicated that training often fails to

match members' learning capacity or operational needs. **AC1** reported that farmers struggled to absorb technical knowledge, forcing the cooperative to consider hiring external staff. **AC3**'s experience was more positive; its members benefited from diverse training partnerships and cost-sharing subsidies that encouraged participation. In contrast, **AC5** continues to lack qualified technical and administrative staff. These results suggest that ARDB's support should move beyond one-off training sessions toward **integrated, needs-based technical assistance** linked directly to loan use, covering areas such as inventory control, contract compliance, and basic financial reporting.

Finally, outreach remains a critical limitation. While ARDB-supported cooperatives demonstrate better governance, liquidity, and market access, significant gaps persist for non-customers and even among clients facing procedural delays. Literature also highlights fragmented institutional coordination among government agencies and donor programs (FAO, 2023). Overall, ARDB's outreach is impactful but uneven. Expanding decentralized service delivery, simplifying loan documentation for first-time borrowers, and aligning disbursements with crop calendars could substantially enhance its effectiveness.

5.2 The Role of ARDB in Supporting ACs in Cambodia

ARDB serves as Cambodia's primary Development Finance Institution (DFI) in bridging financial and capacity gaps faced by ACs. Interview results show that **AC1-AC3**, which accessed ARDB loans, strengthened their governance through more systematic reporting, regular meetings, and transparent decision-making, largely because loans conditions encouraged better documentation and accountability. This demonstrates ARDB's contribution to improving cooperative governance. Moreover, ARDB financing also enables **collective marketing**. Through seasonal and working-capital loans, cooperatives have been able to bulk-purchase products for resales, moving beyond fragmented individual sales toward structured, contract-based aggregation that enhances bargaining power and market access.

In addition to finance, ARDB invests in **capacity building and technical assistance**. Through initiatives such as the CASDP, ARDB channels concessional loans funded by the World Bank to smallholders, cooperatives, and rural enterprises at interest rates as low as 5% per year (ARDB, 2022). This instrument eases financing burdens and improves working capital management. Correspondingly, under the government's SME Co-Financing Scheme, ARDB partnered with ACLEDA Bank

offer joint credit facilities targeting key value chains such as longan, mango, cashew, and aquaculture (Funan, n.d.). This partnership integrates ACs into wider agribusiness networks and creates opportunities for market expansion.

Beyond lending, ARDB promotes **financial inclusion and literacy**. Campaigns have encouraged cooperatives and rural households to open saving accounts and adopt mobile banking, including ARDB's own digital app, expanding financial access in remote areas. In Kampong Thom, ARDB collaborated with cooperatives to build capacity in mobile banking and savings promotion, while in Kampong Cham, ARDB organized workshops on contract farming and value-chain management for mango and cassava producers. Under the CASDP, ARDB has also disbursed millions in wholesale loans to ACs across ten provinces, especially supporting diversification into non-rice sectors such as cashew, fruits, and aquaculture (ARDB, 2022). These interventions highlight ARDB's evolving role beyond finance, enabling cooperatives to diversify and build more resilient production systems.

However, interview reveals that while training opportunities exists, their **effectiveness remains limited**. Farmers often struggle to apply technical knowledge in practice, reflecting a gap between training design and participants' learning capacity. This suggests that while ARDB's current programs are valuable, future efforts should embed tailored technical support into loan packages and ensure continued advisory services rather than isolated training events.

Overall, ARDB's multiple initiatives underscore its central role in agricultural cooperative development. Its concessional loans, co-financing schemes, and financial literacy campaigns are crucial in addressing structural gaps. Yet, to maximize impact, ARDB must expand outreach, simplify procedures, and align technical assistance with farmers' real-world capacities. Strengthening this alignment will be essential for ARDB to drive sustainable, inclusive growth among ACs nationwide.

In summary, both the literature and interviews affirm that ARDB plays a significant role in strengthening governance, enabling collective marketing, and providing technical support to ACs. Despite these achievements, persistent gaps remain in outreach, documentation burden, and training effectiveness. Addressing these through decentralized processing, streamlined requirements, and tailored technical

assistance will allow ARDB, and other DFIs, to transition from enforcing compliance to building capacity, thus supporting the sustainable growth of modern agricultural cooperatives while gradually integrating traditional ones into formal market systems.

6. Policy Implications

To enhance the effectiveness of ACs in improving farmers' livelihoods and access to finance and markets, a set of coordinated policy actions is needed for DFIs, particularly ARDB, and relevant government institutions in Cambodia. The international experiences of Japan, South Korea, and India show that ACs achieve their greatest impact when they operate within strong financial support systems by development banks, clear cooperative governance frameworks, and consistent government backing. These insights strongly align with findings from AC interviews in this study, where cooperatives expressed the need for more accessible finance, clearer communication, stronger institutional support, and closer partnerships with financial institutions.

The policy recommendations below therefore aim to strengthen both the financial role of DFIs and the institutional environment in which ACs operate, ensuring that development finance translates into practical, sustainable benefits for rural farmers.

6.1 Immediate-Term Actions

In the immediate-term, ARDB and other DFIs in Cambodia should place stronger emphasis on **direct engagement and communication with ACs**. Lessons from Japan and Korea indicate that DFIs function most effectively when they maintain structured dialogue with cooperatives to understand local needs. According to the ACs interviews, the findings revealed gaps in awareness and communication regarding available loan schemes, thereby establishing regular consultation channels, such as quarterly meetings, field visits, or digital feedback platforms, would help ARDB better align financial products with farmers' seasonal cash-flow realities and reduce barriers caused by information asymmetry.

Simplifying the loan application process is also essential. Many ACs reported that current procedures are complex and time-consuming, especially for newly established cooperatives with limited administrative capacity. Streamlined documentation,

standardized loan templates, and expanded branch-level technical support would increase access to formal credit for smallholder farmers.

In addition, coordinated information dissemination should be prioritized. Awareness-raising campaigns through provincial departments, commune offices, farmer networks, and social media, combined with joint outreach missions by DFIs and agricultural authorities, would improve transparency and trust between rural cooperatives and financial institutions.

6.2 Short-Term Actions

Over the next one to two years, Cambodia should strengthen **capacity-building partnerships between DFIs, ministries, and AC networks**. International experiences show that DFIs do more than provide loans, they also invest in cooperative management, governance, and financial literacy. In this regard, the AC interviews also highlighted similar needs. Training programs linked loan eligibility would help ensure that credit translates into productive investment and stronger cooperative performance.

DFIs should also introduce **differentiated loan products** suited to different cooperative maturity levels. Smaller and newly established ACs face greater collateral and documentation barriers. Flexible mechanisms such as group guarantees or contract-based lending would reduce exclusion while maintaining financial discipline. This approach reflects NABARD's inclusive lending frameworks in India and cooperative-based credit mechanisms seen in Japan.

In parallel, marketing-linked financing should also be promoted. DFIs and government agencies can jointly fund cooperative marketing activities, contract-farming arrangements, and small-scale processing, so that cooperatives can better connect finance with value-chain participation. Additionally, organizing trade fairs, buyer-meeting events, and product-branding activities would help cooperatives reach more customers and strengthen their position in rural markets.

6.3 Long-Term Actions

In the long term, Cambodia should focus on **strengthening the existing cooperative and agri-SME financing functions within DFIs, especially ARDB**. The department currently responsible for cooperative lending within ARDB could be further developed to play a more strategic role in sector coordination and product design.

This would include expanding its mandate to develop tailored cooperative finance products, conduct sector-specific risk assessments, and systematically monitor cooperative loan portfolios across regions. Over time, this strengthened unit could evolve into a national knowledge hub for cooperative finance via supporting innovation, sharing good practices, and improving institutional learning across DFIs. By consolidating expertise and improving coordination, ARDB would be better positioned to design responsive, data-driven financial solutions that meet the evolving needs of ACs and agri-SME nationwide.

To complement this institutional strengthening, **long-term government commitment** will also be prioritized. The experience of Japan, South Korea, and India shows that ACs thrive when DFIs operate within a supportive public policy environment. Relevant ministries in Cambodia could therefore play a greater role in encouraging cooperative financing through targeting subsidy programs, partial credit-guarantee schemes, and co-funding mechanisms for value-chain investment. Continued investment in extension services, cooperative leadership training, and market-linkage programs would further enhance the ability of ACs to become reliable and bankable partners for DFIs.

Furthermore, **public-private partnerships** should also be promoted to link finance with technical extension, logistics, and market access, reflecting the integrated approaches observed in Japan and South Korea. DFIs should be encouraged to co-design value-chain solutions together with agribusinesses, buyers, and cooperative associations.

Finally, **digital transformation** is another structural priority. Developing a secure agricultural credit platform integrating AC performance data, repayment histories, and farm records would improve risk management and enable data-driven lending decisions, while also expanding outreach to remote areas through mobile banking.

7. Conclusion

ACs play an increasingly vital role in advancing Cambodia's agricultural modernization and improving rural livelihoods. However, significant challenges persist in financial access, market integration, and institutional capacity. This study highlights the crucial role of DFIs, particularly the ARDB, in addressing these constraints through the provision of affordable finance, capacity development, and support for market linkages.

The comparative experiences of **Japan, South Korea, and India** demonstrate that successful cooperative systems are underpinned by strong governance, integration into agricultural value chains, and consistent policy support. For Cambodia, strengthening ARDB's outreach, improving cooperative governance, and fostering cross-sector partnerships will be essential to unlocking the transformative potential of ACs. With coordinated action between government agencies and financial institutions, ACs can evolve into resilient, self-sustaining drivers of rural development.

While the findings of this study provide valuable insights into the potential roles of DFIs and ACs in Cambodia's rural development, **several limitations** must be acknowledged. First, although this study incorporated **primary data through interviews** with selected ACs, the limited number of participants and geographical coverage may restrict the representativeness of the findings. Future research should expand the scale and scope of data collection, using broader interview samples, structured surveys, or mixed-method approaches to capture more diverse and comprehensive perspectives from various regions and stakeholders.

Second, **the comparative analysis** focused on Japan, South Korea, and India, countries that are relatively more advanced in terms of institutional capacity and agricultural modernization compared with Cambodia. As a result, **the direct applicability of their experiences may be** constrained by contextual differences in economic structure, governance systems, and policy environments. Future studies may therefore consider including additional case studies from countries with levels of development and institutional frameworks more comparable to Cambodia, such as those in Southeast Asia or Sub-Saharan African, to enhance contextual relevance and transferability of lessons.

Finally, although the desk review and case studies provide a useful foundation, the analysis depends largely on **the quality and availability of secondary data**, which may not fully reflect recent or unpublished documents. Future research could address this by triangulating data from multiple reliable sources, including government publications, donor reports, and stakeholder consultations, to ensure a more comprehensive and up-to-date understanding of DFIs' engagement in supporting ACs.

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