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Performance and challenges of agriculture cooperatives in Bhutan

Tashi Dendup[1,2], and Satit Aditto[1*]

ABSTRACT: Bhutan promotes agriculture cooperatives (ACs) to deliver farmers with the associated benefits. However, the performance of ACs, factors affecting performance, and challenges of ACs are unknown due to the scarcity of empirical studies. Thus, this study assessed the performance of ACs, relationship between performance of ACs and their organisational characteristics, and challenges of ACs. characteristics. Data were collected through a census of 30 ACs in Central Bhutan using focused group discussions, structured questionnaires, field observations, and informal interviews. Quantitative data analysis involved descriptive statistics, independent t-tests, and the Spearman's correlation. Results of the cooperative performance index showed that 60% of ACs were poor performers. The Spearman's correlation coefficients revealed that the performance of ACs showed a positive and significant relationship with size (1) and age (2) of ACs, education (3) and leadership experience (4) of the chairperson, trust (5) and participation (6) of members, and government supports (7). Thematic analysis revealed challenges, including poor market, production issues like inaccessible to inputs, and weak group cohesion among members hinder the performance of ACs in Bhutan. This study suggests concerned authorities promote contract farmings, value addition of products, product processing, education, and training to boost ACs in Bhutan.

Keywords: agriculture cooperatives, performance, challenges, Bhutan

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[1] Department of Agricultural Economics, Faculty of Agriculture, Khon Kaen University, Khon Kaen, 40002, Thailand
[2] Department of Sustainable Development, College of Natural Resources, Royal University of Bhutan, Punakha, 13003, Bhutan
*Corresponding author: asatit@kku.ac.th

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Introduction

Agriculture cooperatives (ACs) benefit members, community, and nation in numerous ways. For instance, ACs improve access to market, credit, and extensions services such as farm inputs and training (Sonam and Martwanna, 2011). ACs also improve income and food security of households (Nugusse et al., 2013). ACs further improve social capitals (Tenzin and Natsuda, 2016) and employment opportunities (Wanyama et al., 2008) in the community. At the national level, ACs reduce poverty (Tenzin et al., 2015) and increase Gross Domestic Product (Food and Agriculture Organisation, 2011). The Royal Government of Bhutan (RGoB) has been promoting ACs through establishing a favourable legal climate and supporting the formation and operation of ACs. As a result, the number of ACs has increased to 57 from the 10 initial registered cooperatives with the Department of Agriculture and Marketing Cooperatives (DAMC) in 2010 (DAMC, 2018). However, cooperative development is not merely counting the number of registered ACs. ACs must perform well to deliver the intended benefits to their members, community, and country. Thus, it is essential to assess performance status, success factors, and challenges for further development of ACs in the country. Such findings are useful for planning and making informed decisions on matters related to ACs.

Previous studies showed several factors associated with the performance of ACs. For instance, structural characteristics of ACs, including the age of ACs, frequency meetings, number of members in ACs, and number of board members showed a significant association with the performance of ACs (Cai et al., 2016; Thaba et al., 2016; Mkpado and Arene, 2007; O'Regan and Oster, 2005). The qualities of leaders, including age, qualification, leadership experience, and training were also associated with the performance of ACs (Gutema, 2014; Mishra et al., 2009; Ortmann and King, 2007). The performance of ACs was also associated with members related variables, including the number of women, education, trust, and participation (Agarwal, 2001; Garnevska et al., 2011; Xiao et al., 2010). External assistance, particularly government supports, also showed a significant relationship with the performance of ACs (Cox and Le, 2014).

Although there are studies in other countries, ACs are part of a dynamic environment (Dunn et al., 2002); whereby, the findings differ with time and place (Fischer and Qaim, 2012). Bhutan differs in geography, economy, culture, and government; thus, it cannot entirely rely on the findings of the other countries. However, ACs being a recent phenomenon in Bhutan, there is the scarcity of researches on performance and challenges of ACs. Hence, elite officials intervened development of ACs with limited scientific understandings. Therefore, to enable stakeholders to make informed decisions, this study assessed the performance of ACs (1), the relationship between the performance and their organisational characteristics (2), and challenges of ACs (3) in Bhutan.

Methodology

Study Area

The DAMC divided Bhutan into four regions as East, West, Central, and South. This study was conducted in Central Bhutan as it had the maximum number of ACs than other regions. It also had the highest diversity of ACs fulfilling the need for cooperatives related to crops, livestock, and forestry in this study. According to the DAMC, central Bhutan consisted of six Districts, including Bumthang, Dagana, Trongsa, Tsirang, Sarpang, and Zhemgang. As shown in **Figure 1**, Dagana District was excluded as it did not have ACs during the time of study.

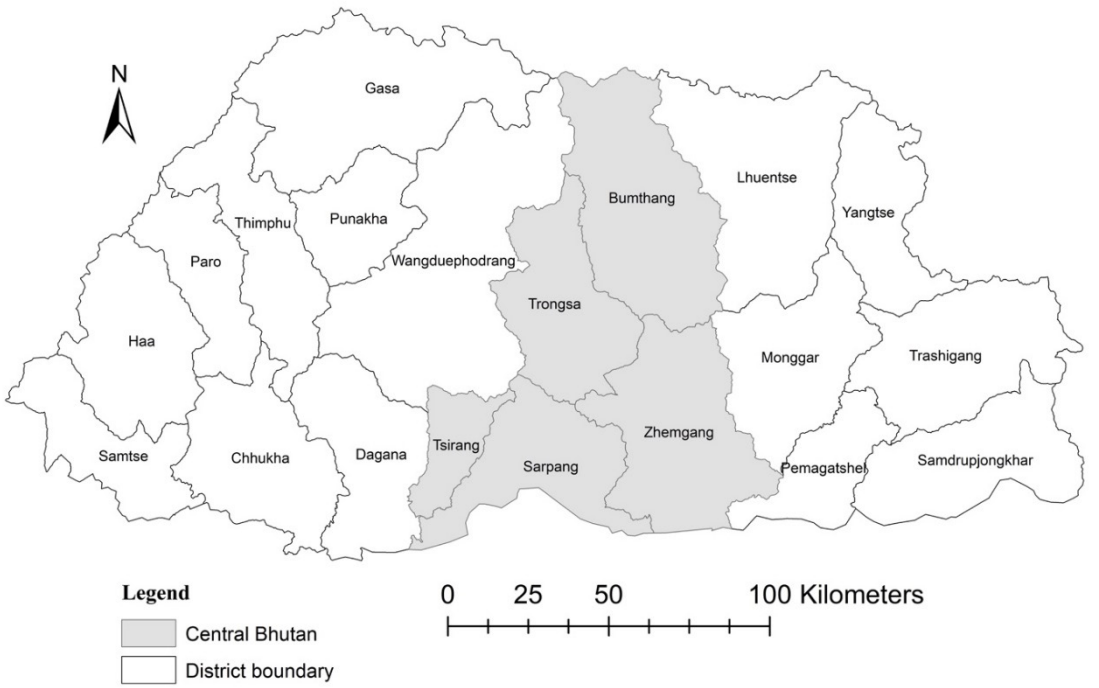

Figure 1 Administrative Map with Districts in Central Bhutan

Respondents and Data Collection

The individual cooperative was the study unit in this study. Central Bhutan had 30 ACs during the time of study representing 52.63% of the total ACs in Bhutan. Although ACs in study area covered more than half of total ACs in the country, small number of ACs in obsolete term necessitude to conduct a census of 30 ACs.

Data collection involved focused group discussions in all ACs in the presence of chairperson, members representative, gewog extension officials, and other district officials. At the end of focused group discussions, chairperson along with at least two other member representatives responded pretested structured questionnaires, where they rated 64 items measuring five dimensions of the Cooperative Performance Index (CPI) adopted from Nkuranga and Wilcox (2013) with minor corrections to suit ACs in Bhutan, as 1= Yes and 0 = No. Questionnaire also consisted of organisation characteristics of ACs and their challenges.

Field observations and informal communications also served useful for the data triangulation. Secondary data from the online directory and grey literature from the DAMC (2018), including books, journals, and the internet were also used for data triangulation and discussions of results.

Table 1 presents 13 organisational characteristics considered in this study with their normality tests (based on the Shapiro-Wilk Tests) and descriptive statistics (including means and standard deviations) of primary data.

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Table 1 Description of variables influencing the performance of ACs

Variables	Shapiro-Wilk Tests	Descriptive Statistics	
		$\overline{X}$	SD
Structural characteristics of ACs			
Number of members	0.854*	29.87	20.887
Years in operation	0.920*	3.67	2.057
Number of board members	0.702**	4.87	2.675
Meetings in a year	0.882*	2.9	2.234
Characteristics chairpersons			
Age of chairperson	0.968	46.17	9.847
Years of chair's schooling	0.849*	5.13	4.569
Leadership held in ten years	0.930	4.97	2.327
Training joined in ten years	0.891*	2.17	1.744
Characteristics of members			
Number of women in AC	0.895*	13.77	11.358
Number of literate members	0.873*	9.03	5.417
Level of members' trust	0.940	3.80	0.795
Level of participation	0.916*	3.88	0.824
External supports			
Level of government supports	0.959	3.78	0.635

* and ** Significant at < .05 and < .001, respectively.

Independent variables were selected from similar previous studies, including but not limited to Cai et al. (2016), Thaba et al. (2016), Gutema (2014), Cox and Le (2014), Garnevska et al. (2011), Xiao et al. (2010), Mishra et al. (2009), Mkpado and Arene (2007), O'Regan and Oster (2005), Ortmann and King (2007), and Agarwal (2001).

Data Analysis

Following Nkuranga and Wilcox (2013), composite scores of 64 indicators measured the performance of ACs. Two sample independent t-tests were computed to compare their organisational characteristics between poor (performance score of less than 50%) and successful ACs (performance score of equal to or higher than 50%). Spearman's correlation coefficients were used to determine the relationship with performance and organisational characteristics of ACs. This is because primary data violated the normality assumptions as shown by Shapiro-Wilk Tests (**Table 1**). During such cases, Kowalski (1975) suggested to used non-parametric tests like Spearman's correlation. Moreover, the thematic analysis was performed to identify major themes and sub-themes of challenges among ACs of Bhutan.

Results and Discussion

Performance Status of ACs

The CPI scores of ACs ranged between 17 and as high as 57 with the average composite score of 32.67 (SD = 11.17). The percentage of overall performance score out of 64 indicators was 50.97%. The prevalence of poor performing ACs was 60% against 40% of successful

ACs, which suggested that the performance of most of the ACs in Bhutan were not successful. A plausible argument is that registration of ACs started only in 2010; thus, there are many ACs at their initial phase of operations. The finding implied that the RGoB and its development partners should continue supporting these poor performing ACs until they can finance and manage themselves.

Figure 2 shows the performance score of ACs in each dimension of CPI. The first dimension consisted of 14 indicators, and it scored the highest with 65.24% indicating ACs perform well in abiding by legal requirements and initial planning. The third dimensions comprised of seven indicators, and it scored the second highest with 56.19% suggesting their access to farm inputs for production. Sonam and Martwanna (2011) also reported that the RGoB supports ACs with inputs, equipment, and training necessary for their production.

The second, fourth, and fifth dimensions relatively performed poor with the scores of 48.48%, 48.17%, and 38.61%, respectively. The field observation also revealed that non-professionals managed ACs and the practice of record keeping was poor. ACs also suffer from inaccessibility and inadequacy of market for their products. Furthermore, there was a reduction of members from their initial registration in many ACs. Thus, promoters of ACs should prioritise programs and funds to improve these poorly performing dimensions.

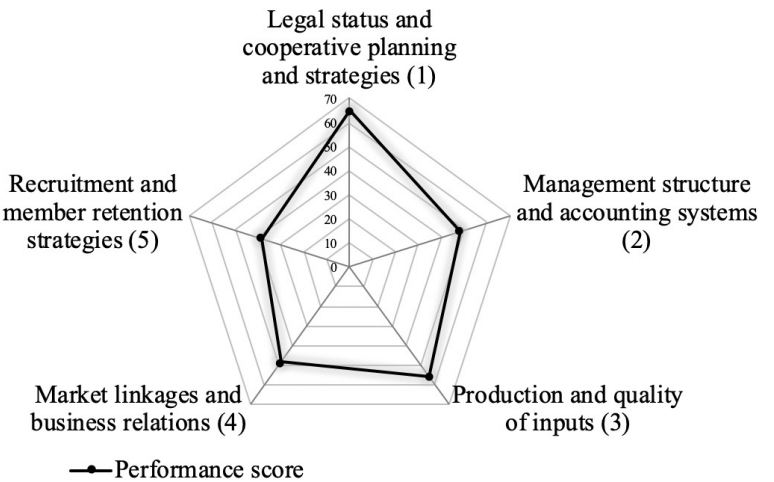

Figure 2 Performance of ACs on five dimensions of CPI

Differences between Successful and Poor Performing ACs

This section presents differences between poor and successful ACs based on two independent sample t-test (**Table 2**). The successful ACs had also significantly operated for longer years against poor performing ACs. Liang et al. (2015) and Thaba et al. (2016) stated that established ACs had accumulated experience and assets to perform better. The successful ACs conducted meetings frequently than their counterparts which agreed with Shan and Xu (2012) and Mkpado and Arene (2007). Corroborating the findings of Purves et al. (2015) and Ortmann and King (2007), leadership experience of chairperson in successful ACs was significantly higher than poor performers. Level of trust and participation of successful ACs were also higher than the poor performers. Earlier studies also reported an essential role of trust and participation for the success of cooperatives (Coote et al., 2003; Borgen, 2001). Government support was also significantly differs revealing that ACs who received more government supports performed better than their counterparts. However, seven other independent variables (**Table 2**) did not show a significant difference between poor and successful ACs. Overall, age and frequency of

meetings, leadership experiences of chair, trust and participation among members, and government support differs between successful and poor performing ACs.

Relationship between Performance and Characteristics of ACs

As shown in **Table 2**, seven of 13 variables including age of ACs, chairs' education, leadership experience, trust, participation, and government support showed a significant relationship with the performance of ACs as discussed below.

The number of members in ACs and their performance were significantly correlated (r = .389, p = .034). ACs with more members had the privilege of surplus labour force enabling them to diversify their activities. Larger cooperatives further enhance technical efficiency (Krasachat and Chimkul, 2009) and reduce transaction costs and opportunistic behaviours among members (Banaszak, 2008). In the agreement, Persson (2010) and Thaba et al. (2016) also reported similar results.

Years of operation also showed a significant relationship with the performance of ACs (r = .440, p = .015). The result agreed with several previous studies (Thaba et al., 2016; Liang et al., 2015; Eriksson and Li, 2012; Bruynis et al., 2001). Potential reasons for this finding are that the established ACs have better experiences, knowledge, institutions, assets, and activities (Barham and Chitemi, 2009; Krasachat and Chimkul, 2009). On the one hand, new ACs must build competencies and mobilise resources (Staber, 1989). Moreover, new ACs take time to develop organisational structures and to stabilise these systems, which hinders their performance at the initial phase of operation.

Table 2 Tests of differences between poor and successful ACs (t) and correlation between the performance and organisational characteristics of ACs (r)

Variables	Poor		Successful		t	r
	$\overline{X}$	SD	$\overline{X}$	SD		
Structural characteristics of ACs						
Number of members	25.14	17.944	33.81	22.599	-1.152	0.389*
Years in operation	2.50	2.029	4.50	1.414	-3.165*	0.440*
Number of board members	4.43	2.344	5.25	2.955	-0.835	0.335
Meetings in a year	1.93	1.900	3.75	2.206	-2.405*	0.307
Characteristics of chairpersons						
Age of chairperson	43.86	6.701	46.63	8.891	-0.951	-0.019
Years of chair's schooling	3.71	4.304	6.38	4.559	-1.637	0.434*
Leadership held in ten years	3.93	1.685	6.06	2.744	-2.520*	0.478*
Training joined in ten years	1.79	1.847	2.50	1.633	-1.124	0.204
Characteristics of members						
Number of women in AC	14.79	10.606	12.75	11.969	0.490	-0.045
Number of literate members	7.50	4.346	10.38	6.021	-1.512	0.328
Level of members' trust	3.486	0.8960	4.075	0.5950	-2.147*	0.483*
Level of participation	3.467	0.9452	4.250	0.4830	-2.913*	0.631**
External supports						
Level of government supports	3.562	0.4422	4.063	0.4517	-3.060*	0.509*

* and ** Significant at < .05 and < .001, respectively.

The relationship between education of chairpersons and performance of ACs were significant (r = .440, p = .015). Educated leaders possess better cognitive abilities, including information processing, situations analysing, decision making, and technologies adopting (Herrmann and Datta, 2002; Adrian and Green, 2001; Amponsah, 1995; Wiersema and Bantel, 1992). Educated leaders also better tolerate ambiguity, take the risk, and have specialised knowledge (Hsu et al., 2013). Hence, educated leaders manage ACs efficiently (Agrawal, 2014; Bijman et al., 2013). The finding also agrees with Gutema (2014) and Nyoro and Ngugi (2007).

Leadership experiences showed significant correlation with performance of ACs (r = .478, p = .008). Purves et al. (2015) and Ortmann and King (2007) also supported successful ACs often associated with experienced leaders. Managing ACs is difficult and requires broader sets of skills (Cook, 1994). Often, management skills, knowledge, and behaviour come with leadership experience (Bond, 2009). Hence, experienced leaders are efficient in solving problems in cooperatives (Prakash, 2000). The finding suggested that it is important to build the management capacity of cooperative leaders for better performance of ACs.

The relationship between level of trust and performance of ACs was significant (r = .483, p = .007), where other studies have also corroborated with the current finding (Hansen et al., 2002; Dess and Shaw, 2001). ACs having a strong sense of trust exhibited higher level of participation and unity. Previous studies also showed trust in ACs improved commitments, cooperation, information, participation, coordination, and business networks; and reduces transaction costs (Martins et al., 2017; Gall and Schroder, 2006; Granovetter, 2005; Johnston et al., 2004; Coote et al., 2003; Borgen, 2001).

Level of participation among members and the performance of ACs were significant (r = .631, p = .000). Earlier studies have also reported the positive relationship between these two variables (Thaba et al., 2016; Garnevska et al., 2011; Whitman et al., 2010; Flygare, 2006). Active participation is found to improve members engagement in cooperative activities, commitments, and responsibility (Othman et al., 2012; Österberg and Nilsson, 2009; Persson, 2010). Active participation facilitates the efficient management of cooperative (Othman et al., 2014), contributing to the success of ACs.

Government supports significantly correlated with the performance of ACs (r = .509, p = .004). Besides efforts of the RGoB in creating a conducive legal environment for ACs, the RGoB further helps ACs with finance, machinery, farm inputs, and training (Sonam and Martwanna, 2011). However, not all ACs receive government supports equally; hence, ACs receiving more government supports performed better than their counterparts. Earlier studies also reported positive results between these two variables (Cai et al., 2016; Cox and Le, 2014; Garnevska et al., 2011; Persson, 2010; Ünal et al., 2009; Banaszak, 2008).

Challenges among ACs in Bhutan

Thematic analysis revealed three major themes of challenges among ACs in Bhutan (**Figure 3**). Firstly, the poor market for farm products is the leading challenge among Bhutanese ACs due to less demand for farm produce in rural villages as households practice self-subsistence integrated-farming (Sonam and Martwanna, 2011). ACs had to bear high transaction costs to sell their produce in the urban areas due to poor road conditions, high transportation costs, and damages of perishable products on the way. Farmers are also not able to get a premium price for organic products (Tashi and Wangchuk, 2016).

Secondly, ACs suffer production related challenges, including small operation, non-specialised farming, and infant farm mechanisation. ACs particularly the new ones suffer high production costs due to inadequate technology, technical skills, infrastructure, farm inputs, and financial capitals. Expensive commercial animal feed and death of subsidised exotic cattle were other production challenges commonly reported among dairy cooperatives. Religious stigma is another challenge in Buddhist country like Bhutan for venturing business that involve killing of animals such as the broiler, fishery, and piggery.

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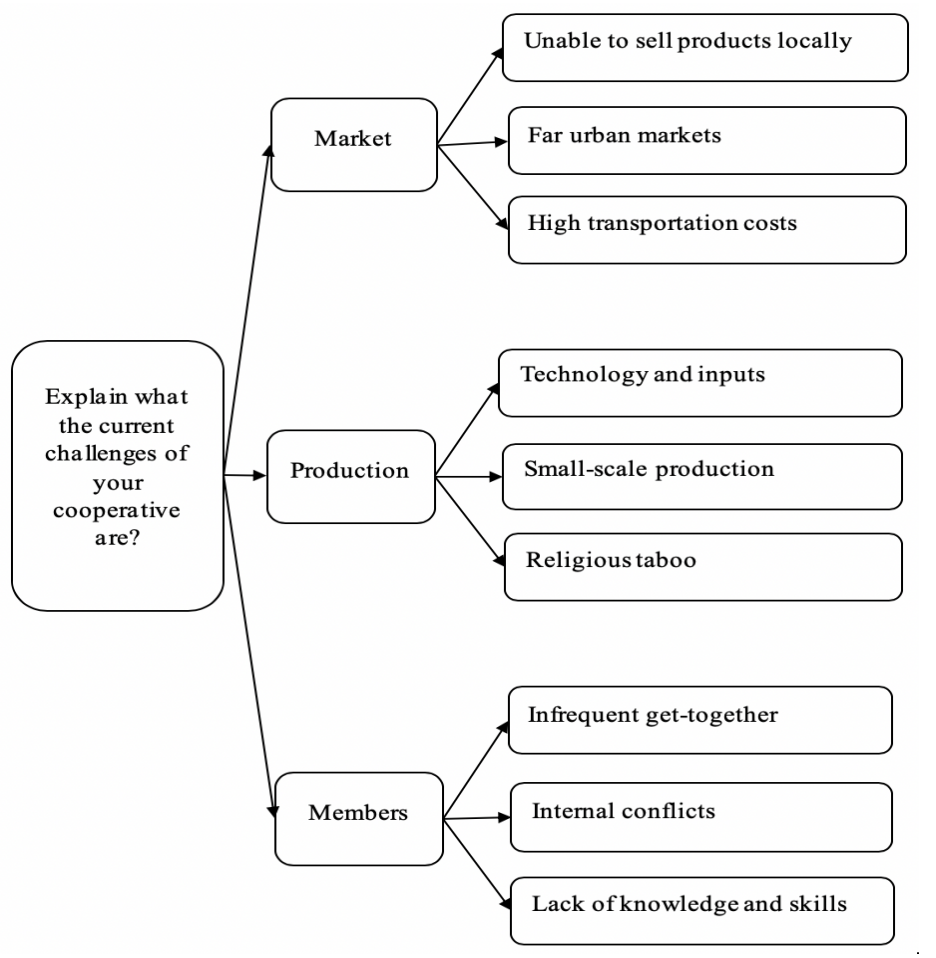

Figure 3 Challenges faced by ACs in Bhutan

The third theme was related to group cohesion among members of ACs. Some members remained in ACs only to get external supports. Hence, there was evidence of internal conflict of interests and poor sense of ownership among members of ACs. The result also showed the poor literacy among members of ACs on cooperative functions and principles suggesting the need for more awareness and training programs.

Conclusion and Recommendations

In conclusion, the performance of the majority (60%) of the ACs was poor indicating the need for external supports until they can manage and finance themselves. Strengthening capacity of ACs initially will have a return in the long run in delivering the expected benefits to their members and community. The result showed that ACs should have more members and operate for long years to succeed. The performance of ACs also depends on education and experiences of chairperson. Group cohesion such as trust and participation are crucial for the success of ACs.

ACs in Bhutan also suffers problems related to poor market and production challenges like inaccessible farm inputs. Thus, this study recommends that the DAMC to promote contract farming with local institutions, including schools, hotels, monasteries, and colleges. It is because,

contract farming can adress the problem of both inputs and outputs markets. As the majority of ACs are producer groups, promoting value addition and processing of products that suit both local and urban markets have the potential to solve market and production problems. Members of ACs need to be educated to create awareness of cooperative modality. Further, the government should continue training members to equip them with skills including record keeping, business management, teamwork, and leadership for the effective management of the ACs.

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