

CHARACTERISTICS OF THE AGRICULTURAL COOPERATIVES AND ITS SERVICE PERFORMANCE IN BAC NINH PROVINCE, VIETNAM

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ABSTRACT

The current characteristics of agricultural cooperatives in Bac Ninh province of Vietnam were investigated and the performance of their service activities were empirically assessed.

The study found that most of the agricultural cooperatives in Bac Ninh province were village-based transformed cooperatives with very small capital. All agricultural cooperatives there provided multiple services to farm households. However, most of them focused on irrigation, extension, seed supply and field protection services while very few provided marketing and credit services. Farmers' comparative opinions on services offered by the cooperatives and the private individuals proved that the cooperatives played the important role in providing irrigation, field protection, extension, and crop varieties supply services, but only a small role in land preparation, fertilizers and pesticide supply, and a very infinitesimal role in marketing and credit services. The lack of qualified staff and shortage of capital were currently serious problems in most of the agricultural cooperatives in Bac Ninh. The improvement of the management capacity of the cooperative staff and accessibility of the cooperatives to financial sources as well as the enhancement of their marketing services to support farm households would be the essential ways to fortify the cooperative's roles in the future.

Key words: Service activities, farm households, agricultural production, agricultural services, Red River delta.

INTRODUCTION

Agricultural cooperatives are part of a dynamic environment (Dunn, 2002). Agricultural cooperatives have played an important role in rural development through development of agriculture (Aref, 2011). The agricultural cooperatives are considered to be the most important organizations that pay attention and try to support the rural development in general and the agricultural development in particular, through the activities and services offered for farmer welfare.

The International Cooperative Alliance defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ICA, 2009). Agricultural cooperatives have also taken steps to implement new strategies to enter the 21st century (Prakash, 2000). Cooperatives are user-driven businesses that have contributed greatly to the development of one of the world's most productive and scientific-based agricultural systems. Cooperatives, as distinct forms of business, rely upon members to work together towards collective goals (Lasley *et al.*, 1997). They have played an important role in strengthening market access and competitive returns for independent farm operators during the 20th century. They adapted their operations to agricultural technological innovations, such as the use of fertilizers, plant and livestock

breeding, agricultural mechanization, electricity and other new sources of energy, and to new information systems (Aref, 2011).

In Vietnam, agricultural cooperatives have been established and developed since the end of the 1950's. The existence and development of agricultural cooperatives have undoubtedly contributed a significant role to agricultural production and rural development (Dinh, 2005; Dung and Le, 2007). Under the central planning economy, agricultural cooperatives used to directly manage the land, organise production activities and the input supply as well as the marketing of the products. However, the launch of a series of renovated agricultural policies since 1988 has placed the vigorous effects on the agricultural cooperatives. Since then, the cooperatives have changed from the direct production managers into the rural economic organization that has the task of only supporting agricultural production of farm households (Wolz, 2000).

Located in the Red River delta, Bac Ninh is considered as an agricultural province as more than 75% of its population and around 70% of its labor force depend on agriculture and other related activities (Bac Ninh Statistical Office, 2008). Similar to other northern provinces in Vietnam, cooperative movement in Bac Ninh had taken place strongly under the collectivization of agricultural production before 1981. However, after the agricultural renovation, agricultural cooperatives in Bac Ninh province have had fundamental changes in its organization and business activities. Most of the former cooperatives were transformed into the new style cooperatives and several cooperatives were newly established in accordance to the Cooperative Law in 1996, and Revised Cooperative Law in 2003 (Bac Ninh DARD, 2008). At present, most agricultural cooperatives focus on providing the farmers with agricultural services such as irrigation, input supplies, etc. However, the opinions on roles of agricultural cooperatives are nowadays quite different. While many people allege that agricultural cooperatives still play the important role in agricultural production, there are also those who disagree. How important are agricultural cooperatives in helping farmers in Bac Ninh province, is thus a rising question which needs to be answered. Under such a situation, this study was designed to investigate the characteristics of current agricultural cooperatives and to assess empirically the performance of service activities in agricultural cooperatives in Bac Ninh provinces. Most past studies of agricultural cooperatives in Vietnam which usually described or investigated the agricultural cooperatives in Vietnam at macro-level (Kirsch, 1997; Wolz, 2000; Rankin and Russell 2005; Nghiem, 2006). This study however focused more on the service performance of agricultural cooperatives with the support of survey micro-data gathered both from local staffs and farm households. The strong and weak points of cooperative service performance were investigated and described in detail through the assessments of cooperative staffs and farmers who used cooperative services.

RESEARCH METHODS

Both secondary data and primary data were gathered for this study. The secondary data on general information of Bac Ninh province, agricultural cooperatives and their activities were gathered from the statistical yearbooks of Bac Ninh province, the reports released by Department of Agriculture and Rural Development in Bac Ninh province and other related publications. In addition, the focus group discussions with staffs of 12 representative agricultural cooperatives in Bac Ninh province were held to get their assessments on the weaknesses and strengths of the cooperative service performances, and their suggestions for better service performances. Furthermore, the direct interviews of 240 farm households in these representative cooperatives using the questionnaire template were implemented in January 2007 to collect the necessary data and information to assess the performance of service activities of agricultural cooperatives in Bac Ninh province. These data and information include the profile of the households, their agricultural production, the households' current use of agricultural services, and the respondents' comparative assessments on agricultural

services provided by cooperatives and individuals in term of payment type, service price and quality. The methods of descriptive statistics and comparative analyses were employed mainly for this study.

RESULTS AND DISCUSSION

Bac Ninh is an agricultural province in the Red River delta. It consists of 7 districts and Bac Ninh town with the total natural areas of 80.5 thousand ha, of which agricultural land accounts for 57.1% or around 46 000 ha. It has a total population of 1 024 000 persons, of which rural population accounts for 76.5%. The majority of its labor force (around 70%) still engages in agricultural sector despite recent reduction. In recent years the Bac Ninh province experienced the sound economic development under the impact of urbanization and industrialization. Its GDP growth reached at 13.5% per annum during 2001-2007 and its agricultural GDP growth recorded at 6.0% (Bac Ninh Statistical Office, 2008) while these figures for the whole of Vietnam were around 7.5% and 3.5%, respectively (General Statistical Office, 2008).

Characteristics of Agricultural Cooperatives in Bac Ninh province

As a result of the decollectivization in agricultural production and cooperative law in 1996 and the Revised Cooperative Law in 2003 (Dung, 2006), the agricultural cooperatives (AC) in Bac Ninh province as well as all over Vietnam have undergone drastic change. In accordance to the Law, all old style or “state-managed style” cooperatives in Bac Ninh had to be transformed into shareholding co-operatives with individual shares. Several old style cooperatives were dissolved or liquidated due to the economic and management problems. In addition, several agricultural cooperatives were also newly established in some locations. There were a total of 579 agricultural cooperatives in Bac Ninh province in 2008. The data revealed that the number of cooperatives varied greatly among the districts (Table 1). This is probably due to the different number of administrative units (villages and communes) among the districts. Most of the cooperatives were transformed ones (93.6%). Only 37 cooperatives or 6.4% were newly established since the cooperative law came into effect in 1997. Most of the agricultural cooperatives (96.3%) were formed based on the village boundaries or were village-based cooperatives. In addition, there were 17 commune-based cooperatives (3.1%) and 3 inter-villages cooperatives (0.6%). In the past, cooperatives existed in all communes or villages. However, due to the dissolution or liquidation of several cooperatives after the launch of the cooperative law, currently there were around 10 villages having no agricultural cooperatives in Bac Ninh.

Table 1. Number of agricultural cooperatives by districts.

Districts	Total number of ACs	No. of newly established ACs	Transformed Agricultural Cooperatives			
			No. of transformed ACs	Percentage		
				Village ACs	Commune ACs	Inter-village ACs
1. Bac Ninh town	61	1	60	96.7	3.3	0
2. Yen Phong	81	9	72	100	0	0
3. Thuan Thanh	61	4	57	86.0	14.0	0
4. Que Vo	110	6	104	100	0	0
5. Gia Binh	75	1	74	100	0	0
6. Luong Tai	87	0	87	96.6	3.4	0
7. Tien Du	69	12	57	94.7	1.8	3.5
8. Tu Son	35	4	31	87.1	9.7	3.2
Total	579	37	542	96.3	3.1	0.6

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008

Before the effects of the Cooperative Law in 1996, the members of all cooperatives in Bac Ninh were farm households. However, the transformation and new establishment of the cooperative after the law diversified the membership. At present, agricultural cooperatives in Bac Ninh could be categorized into two groups according to their membership. The first group included cooperatives whose members were laborers of farm households. The second group consisted of the cooperatives with farm households as members. In general, the second groups accounted for majority (84.4%) of all cooperatives since most transformed cooperatives still retained farm households as members. However, all transformed cooperatives in Thuan Thanh district renewed its member to be laborers, no longer farm households, reflecting the fundamental change in cooperative organization in that district.

Table 2. Membership profile of agricultural cooperatives.

Districts	Membership-laborer		Membership-households		Percentage (%) of ACs		
	No. of ACs	No. of members per AC	No. of ACs	No. of members per AC	7-50 members	51-100 members	Over 100 members
1. Bac Ninh town	1	19	60	260	1.6	0	98.4
2. Yen Phong	9	10	72	227	11.1	2.5	86.4
3. Thuan Thanh	61	37	0	-	3.3	96.7	0
4. Que Vo	1	14	109	235	5.5	1.8	92.7
5. Gia Binh	1	132	74	265	1.3	2.7	96.0
6. Luong Tai	1	15	86	327	1.1	0	98.9
7. Tien Du	12	8	57	274	17.4	4.3	78.3
8. Tu Son	4	202	31	210	11.4	0	88.6
Total	90	38	489	261	6.3	11.7	82.0

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008

The number of members was very different among the cooperatives (Table 2). In general, the laborer-member cooperatives had a small number of members than the household member ones. The transformed cooperative had more members as nearly all their old members still remained in the transformed cooperatives as before. The cooperative with over 100 members accounted for majority (82%) while the cooperative with 50-100 members and with less than 50 members occupied small proportions of just 11.70% and 6.3%, respectively. Only in Thuan Thanh district, did the cooperatives of between 50-100 members account for majority (96.7%).

Agricultural Cooperative's Staff

Generally, one agricultural cooperative consists of 4 sections for management, control, accounting, and assistance. On average, one cooperative in Bac Ninh has currently 5 staff, a quite small number if compared with the cooperatives in past (before the cooperative law 1996 took effects). This small number of staff was a result of the loss of subsidy from local government as before. Usually the management section had only 2 or 3 staff including the cooperative chairman and vice chairman while the controlling section had 1 or 2 staff including the chief controller, and the accounting section had 1 or 2 staff including the chief accountant. The number of staff in each section was decided in the meeting of all cooperative members organized once every three years

Table 3. Agricultural cooperative staff (average).

Districts	Total staff	Number of staff			
		Management section	Controlling section	Accounting section	Assistance
1. Bac Ninh town	4	2	1	1	0
2. Yen Phong	5	2	1	1	1
3. Thuan Thanh	4	2	1	1	0
4. Que Vo	6	2	2	1	1
5. Gia Binh	4	2	1	1	0
6. Luong Tai	6	3	1	1	1
7. Tien Du	5	2	1	1	1
8. Tu Son	7	2	2	2	1
Total	5	2	1	1	1

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008

The cooperative staff in Bac Ninh had quite low educational levels (Table 4). Only 9.7% of cooperative chairmen, 10.2% of chief controllers and chief accountants graduated from universities. Most of the cooperative chairmen (56.5%) finished high schools while a significant ratio of them completed just secondary school (31.8%). The similarity was found with chief controllers and accountants. The cooperative staffs were mainly trained through short training courses on their special fields. Therefore, the managerial capacity of cooperative staffs was still limited resulting in many difficulties in cooperative's servicing activity organization and management.

Table 4. Educational attainment of major cooperative staff (%).

Staff	Secondary school	High school	College	University
1. Cooperative chairman	31.8	56.5	1.9	9.7
2. Cooperative chief controller	40.3	48.2	1.2	10.2
3. Cooperative chief accountant	32.0	54.8	3.0	10.2

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008

In parallel with management staff, the capital of cooperatives plays a very decisive role in formulating the business activities and degree of the activities in cooperatives. However, the data in Table 5 show that the capital of cooperatives in Bac Ninh province was very small as one cooperative had the capital of only 334.6 million VND in average. Moreover, the average capital of cooperative varied greatly among districts. While the average capital of one cooperatives in Bac Ninh town was just around 90.8 million VND, the figure in Yen Phong district was 563 million VND and in Tu Son district was more than 1 billion VND.

The data reveals that the flowing capital for running service activities is too little as it accounted for only 17.7% of total capital or just 59.2 million VND. The fixed capital or the value of fixed assets in cooperatives like cooperative office, working facilities, etc., accounted for 82.3% of total capital. The structure of the capitals in cooperatives was therefore unbalanced. Too little flowing capital was currently considered as one of main problems impeding the implementation of service activities in cooperatives.

In general, the capital of cooperatives was derived from three sources: from old cooperatives transferred (for the transformed cooperatives), from members' share and from cooperative's accumulation of their annual profits, and from members' contribution. Of these, the capital transformed from old cooperatives accounted for the majority or 57.8% (Table 5). The capital from accumulation accounted for 38.9%. The cooperative members' contribution made up very little proportion (0.8%) of its total capital in the average. This very little proportion from cooperative members' contribution came from the fact that only several cooperatives had the contributions from their members (only in Thuan Thanh and Tien Du districts).

Table 5. Capital profile of agricultural cooperatives.

Districts	Total capital per cooperative (mil VND)	Type of Capital		Capital sources		
		Fixed capital (%)	Flowing capital (%)	From old coop (%)	Contribution (%)	Accumulation and share (%)
1. Bac Ninh town	90.8	75.1	24.9	58.5	0	41.4
2. Yen Phong	563.9	79.1	20.9	51.0	0	49.0
3. Thuan Thanh	239.3	78.1	21.9	52.8	9.6	5.0
4. Que Vo	176.3	87.2	12.8	74.1	0	25.9
5. Gia Binh	424.3	81.6	18.4	75.9	0	24.1
6. Luong Tai	207.3	84.2	15.8	66.0	0	34.0
7. Tien Du	328.3	84.0	16.0	72.1	0.6	27.3
8. Tu Son	1028.6	85.1	14.9	30.6	0	69.4
Total	334.6	82.3	17.7	57.8	0.8	38.9

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008.

Service Activities Performed by Agricultural Cooperatives in Bac Ninh Province

Overview of services currently performed

During the collectivisation of agricultural cooperatives, the agricultural production cooperatives used to directly manage the land, to organise production activities and the input supply as well as the marketing of the products. However, since the de-collectivisation of agriculture in 1981, especially after 1988 with the launch of agricultural renovated policies, the role of agricultural cooperatives had been much reduced. The farm households, not agricultural cooperative any more, were recognized as the primary units of agricultural production. Cooperative land was allocated to households. The cooperative therefore had the function of only supporting or providing the services for the agricultural production in farm households. Due to the de-collectivisation, the formers agricultural cooperatives had either to focus on service activities to promote agricultural production of farm households or to cease to exist. Nowadays, cooperatives have consequently become the business units and they have to be economically successful to be of a lasting nature.

As suggested in the cooperative law 2003 that cooperatives could provide as many services as possible in order to support agricultural production of farm households (Dung, 2006). It is also understood that all costs have to be covered by prices. The cooperatives also have to compete with the private sector in providing the services for farmers. Hence, most cooperatives concentrate on a few services only and will gradually expand once they have gained more experience. Usually, the

respective services offered are managed by specialised groups comprising several members of the cooperative. These members are specialised in certain fields. The main services provided by agricultural cooperatives to farm households include the irrigation management, input supplies, extension activities or technology transfers, land preparation, field protection, veterinary service, and marketing service.

Participation of agricultural cooperatives in service activities

The cooperatives in Bac Ninh province provided farm households with quite diversified services (Table 6). However, most of the cooperatives concentrated on irrigation, extension, varieties supply, and field protection services. The management of the irrigation systems was the most important activity because without a certain level of cooperation, irrigation systems could not be maintained properly. To operationalize the service, the cooperatives bought water from the irrigation companies of respective districts, then provided water to every internal channel for farmer's use, and finally collected the irrigation fee from farmers. Irrigation service was practiced by nearly all cooperatives (88.9%) in Bac Ninh province.

Many of the cooperatives (93.6%) in Bac Ninh were actively supporting extension services to farmers. For this service, an extension group of the cooperatives was responsible to acquire up-to-date information about improvements in production technologies, e.g. adoption of new high-yielding varieties, seed multiplication, plant protection, or animal husbandry, then the group would pass on this information to farmers through training courses. The extension services usually received the financial and technical supports from the Department of Agriculture and Rural Development of the respective districts.

Table 6. Participation of agricultural cooperatives in service activities (%).

Services	Districts								Total
	Bac Ninh	Yen Phong	Thuan Thanh	Que Vo	Gia Binh	Luong Tai	Tien Du	Tu Son	
1. Irrigation	93.4	88.9	55.7	93.6	98.7	100	82.6	88.6	88.9
2. Field protection	21.3	88.9	55.7	90.9	94.7	20.7	73.9	77.1	66.7
3. Land preparation	16.4	4.9	59.0	12.7	60.0	87.4	55.1	77.1	43.2
4. Veterinary	3.3	79.0	18.0	16.4	29.3	3.4	30.4	40.0	26.8
5. Fertilizer and pesticides	3.3	7.4	16.4	23.6	65.3	1.1	42.0	88.6	26.6
6. Agricultural extension	98.4	88.9	93.4	94.5	98.7	100	82.6	88.6	93.6
7. Marketing	4.9	0	8.2	0.9	16.0	5.7	7.2	2.9	5.5
8. Crop varieties	88.5	88.9	57.4	93.6	88.0	98.9	85.5	88.6	87.4
9. Credit	0	2.2	0	0	0	0	0	0	0.4

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008.

Nearly 70% of cooperatives offered the field protection service. The responsible group of the cooperatives would protect the farmers' field from the damage caused by cattle or from thieves during the crop growth and harvest time. The farmers would pay for that service according to their growing areas. In addition, the reliable supply of necessary inputs used to be an important activity since many years.

Characteristics of agricultural cooperatives and its service performance.....

In general, the cooperatives concentrated on the timely supply of fertilizers, pesticides, and seeds to strengthen crop production at their members' farms. Many cooperatives were linked by contract to input producing factories which are supplying the inputs on a credit basis. The cooperatives themselves could sell or offer the inputs to farm households in need as a credit-in-kind as well. After harvest, the farm households would pay their cooperatives and the cooperatives would repay the companies. However, in recent years, due to the vigorous competition from individuals, the cooperatives have faced difficulties in providing fertilizers and pesticides. Therefore, only 26.6% of cooperatives have remained to supply fertilizers and pesticides to farmers. The cooperatives now could actively supply only crop varieties to farm households because they could more easily link with seed companies or with District Extension Department to get the new crop varieties. The farmers also more believed in the quality of crop varieties provided by cooperatives than by individuals. Thus, crop varieties supply was serviced by almost all cooperatives (87.4%).

In case the cooperative owns the necessary machines, they could provide farmers the land preparation. However, this service was challenged by the very fierce competition from individuals, and the individuals seemed to get advantages over cooperatives in practicing this service. As a result, currently only 43.2% of cooperatives still provided land preparation service to farmers. In addition, several cooperatives (26.8%) provided the veterinary service to farmers. When farmer's animals had diseases, a specialized group in those cooperatives would diagnose the diseases, then recommended the way to treatment or sell farmers the medicines for treatment.

Although support for farmers to market their agricultural products or marketing service was admitted to play a very important role in promoting agricultural production of farm households, it was nowadays performed by very few cooperatives in Bac Ninh. The data show that only 5.5 % of cooperatives performed this service. The main reason of this situation was that most of the cooperatives hardly find any company or partner who could buy or process the farmers' agricultural products. The weakness of this service in the cooperatives resulted in the uncertainty of agricultural product price. Consequently, the farmers in Bac Ninh have encountered many difficulties in their agricultural production.

Monetary credit has become more and more important as the cash needs of the farmers for their production and life. However, under the present conditions, shortage of capital or monetary credit seems to be the most serious constraints for both individual farmers and agricultural cooperatives. As reported the cooperatives could not borrow from the banks due to their lack of collateral. Consequently, credit service was left by nearly all cooperatives in Bac Ninh as only two (0.4%) of all cooperatives practiced this service.

Economic efficiency of service performance

The de-collectivization of agricultural production has turned agricultural cooperative into more or less an economic organization in rural areas. Nowadays, the existence and development of agricultural cooperatives mostly depend upon the economic efficiency of their service activities. However, the data shows that the average revenue of one cooperative in Bac Ninh, in 2008, was quite small, just 94.2 million VND (Table 7). Only 67.7% of the cooperatives profited from their services, but this amounted to only 20.8 million VND per cooperative. Cooperatives in Tu Son district even gained a very small profit of just 1.4 million VND in 2008.

Many agricultural cooperatives in Bac Ninh (31.4%) were just break even from their service activities. Some cooperatives (0.9%) even lost. Improved efficiency of services activity performed by agricultural cooperatives in Bac Ninh was therefore very essential at present.

Table 7. Agricultural cooperative's profit and loss from service activities

Service	Total Revenue per AC (mil. VND)	Profit received			Loss incurred			Break even	
		No. of ACs	Ratio (%)	Profit per AC (mil. VND)	No. of ACs	Ratio (%)	Loss per AC (mil. VND)	No. of ACs	Ratio (%)
1. Bac Ninh town	29.5	30	49.2	26.7	0	0	0	31	50.8
2. Yen Phong .	148.5	63	77.8	21.3	0	0	0	18	22.2
3. Thuan Thanh	106.9	25	41.0	14.4	0	0	0	36	59.0
4. Que Vo	167.2	96	87.3	23.0	0	0	0	14	12.7
5. Gia Binh	53.3	75	100	20.0	0	0	0	0	0
6. Luong Tai	51.6	70	80.5	26.0	0	0	0	17	19.5
7. Tien Du	74.7	24	34.8	4.2	5	7.2	1.1	40	58.0
8. Tu Son	61.3	9	25.7	1.4	0	0	0	26	74.3
Total	94.2	392	67.7	20.8	5	0.9	1.1	182	31.4

Source: Department of Agriculture and Rural Development, Bac Ninh, 2008.

Farmers' use of agricultural cooperative services

In order to understand the farmers' current use of services provided by agricultural cooperatives, an interview of 240 farmers from 12 cooperatives in various districts of Bac Ninh province was implemented. The interview results show that almost all cooperatives provided irrigation service and 90.9% of the farmer respondents utilized this service provided by the cooperative for over 90% their needs (Table 8). The farmers in the cooperatives which did not provide this service purchased water from private irrigation teams. The field protection service provided by cooperatives was used by 90.9% of the farmer respondents. However, only 45% of farmer respondents reported that this cooperative service met over 90% of their needs. Other farmer respondents revealed this cooperative service met only 50-90% their needs. Only 61.3% of farmer respondents used or accessed the extension service provided by cooperatives. However, 30.3% reported extension service by cooperatives met only 50% of their needs. Farmers also received the extension information from other sources, not only from cooperatives.

For material supply services such as fertilizers, pesticides and crop varieties, and land preparation service, the cooperatives encountered vigorous competition from other suppliers. Many cooperatives therefore stopped providing these services. Of the twelve surveyed cooperatives, several still retained these services. The farmers thus had alternatives as they could purchase fertilizers, pesticides, crop seeds not only from cooperatives, but also from private stores in the free markets. The data shows that farmers who used these services from cooperatives accounted only for 12.9% and 34.5% of the farmer respondents purchased fertilizers and pesticides from cooperatives, respectively. Moreover, these farmers did also not purchase wholly from cooperatives, but only a part of their total needed quantities. In case of crop varieties, more farmer respondents (71.3%) purchased from cooperatives as they believed more in quality, but only 23.7% bought more than 90% of their needs. The cooperatives could not supply enough seeds to the farmers, while these seeds sold by the cooperatives were expensive thus preventing farmers from buying more.

The marketing of the farm products is one of the most important activities on which great hope has been placed by farmers and society as well (Cho, 1999). However, it seemed very hard for agricultural cooperatives in Bac Ninh province to enter and develop marketing activities. Only one cooperative provided marketing service or procured farmers' agricultural products to sell them to a

processing company and only 6.7% of the farmer respondents benefited from this service. However, these farmers could only sell a small volume of their products to cooperatives.

Table 8. Percent of farmer respondents using cooperative services.

Service	No. of ACs providing service	Farmers using AC service	Farmers using AC service for over 90% of their needs	Farmers using AC service for 50-90% of their needs
1. Irrigation	11	90.9	90.9	0
2. Field protection	11	90.9	45.0	39.7
3. Land preparation	3	17.7	0	11.5
4. Fertilizer	2	12.9	2.7	7.8
5. Pesticide	5	34.5	15.2	14.6
6. Agricultural extension	8	61.3	30.3	30.3
7. Crop varieties supply	8	71.3	23.7	31.6
8. Marketing and prod. sale	1	6.7	0	0
9. Credit	0	0	0	0

Source: Field survey, 2007.

Farmers' assessment of cooperative services

In order to have a better understanding of the efficiency of service activities provided by cooperatives, the farmers were encouraged to compare services provided by cooperatives and individuals or others, in terms of payment schemes, selling price and quality of service. The data indicate that cooperatives organized better the services of irrigation, field protection, extension, and crop varieties supply as almost farmers (over 70%) reported that for these services the cooperatives offered better payment schemes, cheaper price and better quality of service (Table 9). On the other hand, many farmers reported that the cooperatives were worse than individuals in providing land preparation service, fertilizer supply, marketing service in terms of payment method, selling price and service quality.

Table 9. Farmers' assessment of services provided by cooperatives and individuals (%)

Service	No. of assessed farmers	Payment scheme		Selling price		Service quality	
		Better	Worse	Cheaper	More expensive	Better	Worse
1. Irrigation	240	83.8	2.1	82.9	2.5	77.1	6.7
2. Field protection	185	77.8	3.8	76.8	3.8	77.3	3.8
3. Land preparation	120	14.2	6.7	17.5	35.8	6.7	17.5
4. Fertilizer	201	7.5	55.7	10.9	46.3	16.4	7.0
5. Pesticides	190	10.0	52.1	6.8	55.3	74.2	3.7
6. Agricultural extension	131	93.9	2.3	92.4	3.1	89.3	2.3
7. Crop varieties supply	240	75.4	3.8	62.9	19.2	74.6	17.9
8. Marketing	18	33.3	61.1	38.9	33.3	16.7	33.3

Source: Field survey, 2007.

In case of pesticide supply, more farmers reported that individuals offered better payment methods and cheaper price, but pesticide quality was not guaranteed while the cooperatives assured farmers of the pesticide quality but imposed inflexible payment schemes and higher prices.

CONCLUSION

Agricultural cooperatives in Bac Ninh province have undergone the fundamental changes in their organization and business activities since the renovation in 1988. At present, majority of the agricultural cooperatives in Bac Ninh were the village-based transformed cooperatives. The number of cooperative members varied greatly among cooperatives, however, almost cooperatives (81.6%) had more than 100 members. Almost all cooperatives owned very small capital, especially working capital. The shortage of qualified staff and capital are currently serious problems in most of the agricultural cooperatives in Bac Ninh.

All agricultural cooperatives in Bac Ninh provided multiple services to farm households. However, most of them focused on irrigation, extension, seed supply and field protection service. A few cooperatives provided land preparation, and fertilizer and pesticide supply services due to vigorous competition by private individuals. Overall, the ratio of farmers using the services provided by the agricultural cooperatives and their use degree were varied depending on the kind of service. Farmers' comparative opinions on services offered by the cooperatives and the private individuals proved that the cooperatives played the important role in providing irrigation, field protection, extension, and crop varieties supply services, but little role in land preparation, fertilizers and pesticide supply. The cooperative even played an infinitesimal role in marketing service and nearly no role in providing credit service to farmers.

For better performance of service activities in agricultural cooperatives, it is very necessary to improve the management capacity of cooperative staffs and to enhance cooperatives' accessibility to credit organizations. Moreover, enhancement of cooperatives' marketing services to support farm households will be the essential way to fortify the cooperative's roles in the futures.

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