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ON THE CO-OPERATIVE DISTRIBUTION OF FERTILIZERS IN JAPAN

I

In the present-day exchange economy, any mode of livelihood has two phases—the acquisiton of money, and the disbursement of it. It is true that among small farmers, who are numerically predominant in Japan, the antiquated mode of life based on self-sufficiency still persists to some extent, but even these people cannot be secure from the inevitable consequences of the exchange economy, which compels them to get money through the sale of their farm produce and to purchase agricultural implements and daily necessaries with the money thus earned. In order to live in conformity with this exchange economy, it is necessary for them to study, above all, how to get money advantageously. At the same time, it is also necessary to consider how to make a good use of money. So long, however, as small farmers continue to act independently of each other in their agricultural life, without making any effort to co-operate, it will be impossible for them to accommodate themselves profitably to the exchange economy. Co-operation in the circulation process can be achieved only when individual farmers realise the advantages of collective sales and purchases.

The co-operative purchasing society, the merits of which I now propose to discuss, constitutes, needless to say, one phase of such co-operation. It is an organization which undertakes the collective purchase of the commodities required by its members, all of whom are farmers, and the distribution of these commodities among them. Inasmuch as the farmer is at once the producer and the consumer, it is quite natural that the commodities which he requires should

consist of both industrial goods···producers' goods···and economic goods···consumers' goods. The farmers' co-operative purchasing society differs in nature from the consumers' co-operative society in urban districts in that whereas the latter handles economic goods exclusively, the former handles fertilizers and other industrial goods as well.[1] One prominent feature of the farmers' co-operative purchasing society is that it is directly concerned with agricultural production itself throug its handling of industrial goods. In its distribution of industrial goods, therefore, the society must see that the goods are supplied cheaply to its members and that a judicious choice is made of the goods for distribution so as to promote the rationalisation of farm management, keeping itself in constant touch with the management of the farms of its members.

The mission of the co-operative purchasing society is threefold. First, its mission is to rationalize the circulation process of industrial goods and daily necessaries and to supply such goods to its members cheaply by eliminating the interposition of intermediary merchants. Secondly, it operates to enlarge the business power of the buyers vis-à-vis the sellers by uniting numerous and unorganized small purchasers into a big one. That is to say, it brings into being enormous purchasing power by uniting the purchasing powers of individual small farmers, and by means of this big combine of purchasers, secures the power of controlling distribution throughout the country or over an extensive area. By this means, it restrains the activity of commercial capital intervening between production and consumption, with the object of securing fair and equitable purchase prices. It further aims at the elimination of monopolistic

1) The commodities handled by the urban co-operative purchasing societies (177 in all) in 1933 wers economic goods exclusively, the sales of which totalled ¥22,119,365, or ¥124,968 per society on an average (according to the Report on the sixth inquiry into the workings of the urban co-operative purchasing societies, published by *Sangyōkumiai-chuōkai* (Central Union of Co-operative Societies).

profits by restraining arbitrary rulings on the part of capitalist producers who monopolize the market. These two functions of the co-operative purchasing society are, of course, closely related to each other, but in the matter of priority, the first-mentioned function must first be fulfilled and then the second one. For, as the industries with which the co-operative purchasing society has to deal become enlarged in scope and grow more intensely capitalized, the society must necessarily become more efficiently organized and strengthened. The third and the last function of the co-operative purchasing society is to stabilize technically the position of the farmer in the exchange process. The farmer, who is out of touch with the financial nerve-centre and is not in a position to acquaint himself fully with the trend of the economic world, is no match for the merchant, who is shrewd in commercial transactions, and is very often compelled to make a bad bargain. If, however, the co-operative purchasing society is formed and gradually gains in scope until it develops from a local organization into a nation-wide federation, with its power of combination similarly enhanced, the mass purchases of all lines of goods by the society can be put in expert hands, with the result that transactions can be effected on favourable terms. In this way, the position of the farmer can be made much stronger than where he has to deal with the merchant individually.

II

As already mentioned, the farmers' co-operative purchasing society differs from the consumers' co-operative society in urban districts in that it handles industrial goods besides economic articles (daily necessaries of life), and it is now handling far more industrial goods than economic goods.

According to Table No. 1, the total sales by the co-operative purchasing societies in 1933 amounted to ¥141,013,000, but this figure represents only 5.6 per cent. of the total amount of the purchases made by the farmers throughout

Table No. 1.

Items of commodities sold by the co-operative purchasing societies and the total amount of sales (in 1933). (The figures showing the values of the goods purchased by all farm families in the country are those of 1932).

	Items of commodities	Value (In ¥1,000)	Percentage (%)
Industrial goods	Fertilizers	63,623	45.1
	Sericultural implements	1,035	
	Seedlings	556	
	Silkworm eggs	486	
	Materials for agricultural uses	1,109	
	Fodder	5,696	4.0
	Fishing implements	369	
	Drugs	771	
	Fuel	2,663	1.9
	Industrial raw materials	9,498	6.7
	Others	5,690	
	Total	**91,498** (b)	**64.9**
Economic goods	Rice	12,561	8.9
	Barley	520	
	Other cereals	1,112	
	Miso (bean-paste)	135	
	Soy	1,256	
	Tinned food	262	
	Sugar	3,192	2.3
	Salt	1,997	
	Tea	166	
	Liquors	7,991	5.7
	Beef & fresh fish	785	
	Vermicelli & dried vegetables	1,771	
	Fruit & fresh vegetables	12	
	Other foodstuffs	2,534	
	Clothing, fancy goods & footgear	4,728	3.3
	Articles of furniture, hardware, kitchen-ware, & rain-outfits	2,173	
	Stationery and paper	1,010	
	Firewood & charcoal	1,115	
	Kerosene oil & coal	667	
	Others	3,702	
	Total	**47,689** (c)	**33.8**

Commodities for both industrial & economic uses (firewood & charcoal, kerosene oil, salt, coal, oil, lime, etc.)	1,828	1.3
Grand Total	141,013 (a)	100.0
Total amount of purchases by all farm families in Japan	2,523,647 (A)	$\frac{(a)}{(A)}$ 5.6
Industrial goods	823,660 (B)	$\frac{(b)}{(B)}$ 11.1
Economic goods	1,699,987 (C)	$\frac{(c)}{(C)}$ 2.8

Note: The figures in the above table were worked out on the basis of the information contained in the 31st summary of co-operative societies (for 1933), published by the Economic Recovery Section of the Department of Agriculture and Forestry, and also in the Report on the sixth inquiry into the workings of the urban co-operative purchasing societies (for 1933), published by the Central Union of Co-operative Societies.

the country, which is put at ¥2,523,000,000. The industrial goods sold represent 64.9 per cent. of the total sales. That is to say, the value of the industrial goods sold by these societies represents 11.1 per cent. of the total value of such goods purchased by the farmers throughout the country, which is put at ¥823,660,000. Altogether, it must be admitted that the amount distributed by the farmers' co-operative purchasing societies is still very insignificant. One noteworthy fact is that the fertilizers distributed by the societies in 1933 totalled ¥63,623,000 in value, or 45.1 per cent. of the total amount of the goods distributed by them, viz. ¥141,013,000. It is nearly 70 per cent. of the total amount of the industrial goods distributed, which stands at ¥91,496,000. The total value of the fertilizers distributed by the societies thus constitutes 28.5 per cent. of the total amount of the fertilizers purchased by the farmers throughout the country, which is given as ¥223,000,000. How is it, then, that the co-operative purchasing societies show this remarkable advance in the distribution of fertilizers?

In the light of fertilizer consumption, it would seem that Japanese agriculture is certainly one which requires plenty of manure. And now that almost every available tract of

waste-land and hillock is put under cultivation, there is little prospect of an increase in the supply of such manure as is manufactured by the farmers themselves, except in some special districts. Thus, there is a steady growth in the importance of marketed fertilizers.

Table No. 2. Consumption of marketed fertilizers.[1]

Years	Consumption of fertilizers, (In 1,000 tons)	Index number of consumption (consumption in 1913 being taken as 100) (A)	Index number of arable land (the area of arable land in 1913 being taken as 100) (B)	Properly adjusted index number of fertilizer consumption $\frac{(A)}{(B)}$
1913	2,008	100	100.0	**100.0**
1914	1,858	93	100.4	**92.6**
1915	1,632	81	101.1	**80.1**
1916	1,683	84	101.7	**82.6**
1917	2,029	101	102.7	**98.3**
1918	2,314	115	104.0	**110.0**
1919	3,042	151	104.8	**144.1**
1920	2,538	126	105.0	**120.0**
1921	2,583	129	105.2	**122.6**
1922	2,853	142	105.1	**135.1**
1923	3,078	153	104.2	**146.8**
1924	3,034	151	104.7	**144.2**
1925	3,144	157	104.7	**149.9**
1926	3,760	187	104.9	**178.2**
1927	3,729	186	104.9	**177.3**
1928	3,797	189	105.0	**180.0**
1929	3,946	196	101.8	**192.5**
1930	3,787	188	102.1	**184.1**
1931	3,876	193	102.7	**187.9**
1932	3,619	180	103.4	**174.1**
1933	3,702	184	104.0	**176.9**
1934	4,091	203	104.2	**194.8**

1) The figures in this table were worked out on the basis of information contained in the Summary Report on Fertilizers and a statistical table, published by the Department of Agriculture and Forestry.

Since the early years of *Taishō* (the *Taishō* era began in 1912 and ended in 1926) the consumption of purchased fertilizers has been steadily on the increase, though the rising tendency has sometimes suffered a setback due to the depression. As the above table shows, there has been some decrease in consumption since the agricultural depression of 1930, but about 180 per cent. increase is nevertheless recorded compared with the early years of *Taishō*.

Table No. 3.

Cash payments of agricultural management cost.[1]

	1929		1930		1931	
	Amount (Yen)	Percentage	Amount (Yen)	Percentage	Amount (Yen)	Percentage
Fertilizer	195.61	% 44.1	150.94	% 47.2	120.38	% 42.6
Agricultural implements	20.68	4.7	13.04	4.1	14.74	5.3
Wages	40.49	9.1	29.02	9.1	20.37	7.2
Other expenses	187.12	42.1	126.74	39.6	127.04	44.9
Total	**443.90**	**100.0**	**319.74**	**100.0**	**282.53**	**100.0**

If the situation is considered by leaving the rate of expansion in arable land out of consideration, the use of fertilizers in Japanese agriculture increased from 1 in 1913 (taking the rate of intensity in 1913 to be 1) to 1.77 in 1933.

The productive power of Japanese agriculture has thus increased as it has become more intensive. It is, of course, undeniable that, besides manuring, the improvement in seeds

1) The figures in this table show the averages of the expenses in which 56 farm families (26 peasant proprietor families, 9 families that cultivate land both their own and tenanted, and 21 tenant families) were involved in the years named. The average acreage of arable land is 17.5 *tan* or about 4.3 acres (from the January, 1933, Number of the *Nomu Jiho*···Agricultural Review···, issued by the Agricultural Affairs Bureau of the Department of Agriculture and Forestry).

and in measures for the prevention of floods, together with the elimination of blights, have done much to increase agricultural productive power, but the fact remains that the cost of fertilizers constitutes the biggest single item of expenditure for individual farmers.

It will be seen from the above table that the fertilizer expense constitutes more than 40 per cent. of the total expenditure of farm management. In Japan, where special methods of cultivation suited chiefly for paddy fields are adopted and where the large majority of the farming class are small farmers who cultivate only about one *cho* (2.45 acres) of land per family, the rôle played by fertilizers in production is far more important than that played by machinery or cattle. And in view of the pressure of surplus population, which compeles intensive agricultural management in this country, the increase of fertilizer charges is inevitable. Seeing that the total yearly purchases of fertilizers by all farmers in Japan now far exceed ¥200,000,000, the attention of the farmers' co-operative purchasing society is naturally directed to a cheap supply of fertilizers of good quality, so as to reduce the cost of agricultural management and accordingly lower the cost of production. As this means that the consumer can get agricultural products at lower prices, the efforts of the society in this direction will benefit national economy.

III

The farmers' co-operative purchasing society aims, primarily, at the rationalization of the distribution process, but its ultimate objective is to gain control of the nation-wide distribution. This development of its mission is manifest in the distributlon of fertilizers. Organic fertilizer was the first to appear in the Japanese market. At first, it consisted chiefly of fish manure such as herring cake. After the Russo-Japanese War, soya-bean cake, which is cheaper, came prominently to the fore. Of inorganic fertilizers, superphosphate of lime came into use comparatively early. It was in fairly

large demand after the Russo-Japanese War, but it was after the World War that inorganic fertilizer made remarkable headway, because, with the advance of chemical industry, chemical fertilizer such as sulphate of ammonia and calcium cyanamide became cheaper. As is shown in the following table, inorganic fertilizers are now in much greater demand than organic fertilizers.[1]

It will be noticed that, whereas in 1912 inorganic fertilizers represented only 38.8 per cent. of the total purchased fertilizers consumed, the proportion expanded to 60.7 per cent. in 1933. In this way, organic fertilizers, such as bean-cake and fish manure, are gradually losing ground.

There is a remarkable contrast between organic and inorganic fertilizers in the matter of production and also in the manner of distribution. The production of organic fertilizers is undertaken on a small scale by factories widely scattered, and as the raw materials, which account for a large proportion of the cost of production, are largely agricultural and aquatic products, the manufacturers are very eager to realise extra profits by forcing down the prices of raw materials. As, moreover, organic fertilizers have been in use for many years, the system of their distribution is firmly established. This system of distribution is very complex, with central and local wholesalers and retail merchants taking part in transactions in fertilizers on their own account, together with brokers intervening between these merchants. Again, unlike inorganic fertilizers, organic fertilizers have no certificates guaranteeing their ingredients, and this fact, coupled with the lack of standardization, renders transactions

1) Note. Formerly, there was not much difference in price between soya-bean cake and sulphate of ammonia in reference to their nitrogen content. Whereas in 1923 bean cake cost 44.2 sen per 100 *momme* (one *momme* is equivalent to 0.1325 ounces) of nitrogen content, sulphate of ammonia cost 36.3 sen. In 1927, the former cost 41.8 sen and the latter 24.9 sen, while in 1931, the former was quoted at 19.3 sen and the latter at 13.1 sen. In this regard, we must recognise the valuable contribution which the progress of chemical industry has made to agriculture.

Table No. 4.

Tendency in the consumption of marketed fertilizers (figures are in units of 1,000 tons).[1]

Kinds / Years	Organic fertilizers						Inorganic fertilizers							Total fertilizers consumed	Index number	(B)/(A)	(C)/(A)
	Fish manure	Bean-cake	Other vegetable oil-cake	Bone dust	Total (B)	Index number	Super-phosphate of lime	Nitrate of soda	Sulphate of ammonia	Calcium cyana-mide	Sulphate of potash	Total (C)	Index number				
																%	%
1912	93	566	160	35	**854**	100	422	19	92	5	3	**541**	100	**1,395**	100	**61.2**	**38.8**
1914	109	647	174	43	**973**	114	492	24	122	11	5	**654**	121	**1,627**	117	**59.8**	**40.2**
1916	96	808	138	39	**1,081**	126	343	46	45	33	1	**468**	86	**1,549**	111	**69.8**	**30.2**
1918	81	1,273	133	46	**1,533**	179	450	49	54	53	—	**606**	112	**2,139**	153	**71.7**	**28.3**
1920	99	1,164	146	79	**1,488**	174	466	123	155	87	6	**837**	154	**2,325**	167	**64.0**	**36.0**
1922	69	1,385	160	70	**1,684**	197	562	53	168	102	14	**899**	166	**2,583**	185	**65.2**	**34.8**
1924	106	1,291	174	75	**1,645**	193	566	40	254	122	14	**996**	184	**2,642**	189	**62.3**	**37.7**
1926	127	1,510	201	73	**1,911**	224	751	63	399	143	27	**1,383**	255	**3,294**	236	**48.0**	**42.0**
1928	141	1,162	169	70	**1,542**	180	884	48	457	163	34	**1,586**	293	**3,128**	224	**49.3**	**50.7**
1930	115	1,087	168	64	**1,434**	167	922	28	488	232	67	**1,737**	321	**3,171**	227	**45.2**	**54.8**
1932	233	814	123	60	**1,230**	144	960	23	618	181	13	**1,795**	332	**3,025**	217	**40.7**	**59.3**
1933	226	770	142	50	**1,188**	139	1,010	33	551	223	22	**1,839**	340	**3,027**	217	**39.3**	**60.7**
1934	233	978	223	58	**1,492**	174	1,005	39	650	169	49	**1,912**	353	**3,404**	244	**43.8**	**56.2**

The figures in this table were worked out on the basis of information contained in the Manual on Fertilizers, issued by the Agricultural Affairs Bureau of the Department of Agriculture and Forestry in November, 1934.

in them all the more complex. All this leaves ample room for deceptive practices on the part of unscrupulous merchants regarding the quality of the fertilizers. Because of the interposition of complex commercial agencies and transaction usage between production and consumption, and also because the factories are on so small a scale that they are subject to control by commercial capital, the price is apt to be manipulated by intermediary merchants who seek enormous intermediary and speculative profits. As farmers are, as a rule, short of cash, they often have to buy fertilizers on credit, and this frequently compels them to purchase fertilizer with their eyes open to its poor quality. Such being the case, it is quite natural that they should desire to get their supply of fertilizer from the co-operative purchasing society, instead of from such unscrupulous fertilizer merchants. Herein lies the primary mission of the co-operative purchasing society, viz. the rationalisation of the distribution process.

On the contrary, the manufacture of inorganic fertilizers is carried on, as a rule, on a large scale. Not that all kinds of inorganic fertilizer are produced on exactly the same large scale. The manufacture of superphosphate of lime, for instance, does not require big capital investment, as will be seen from the following table, since the technical process of production is comparatively simple and there is no need for the provision of costly plant.

The average capital of the fourteen companies manufacturing superphosphate of lime, given in the following table, is ¥5,743,000, and the average paid-up capital is ¥4,402,000. As the superphosphate of lime industry is, from a technical point of view ill suited for monopoly, it has little chance of being monopolized by big interests.

It is not so, however, with sulphate of ammonia and calcium cyanamide, the latter being a new chemical fertilizer which is making vigorous headway. For their manufacture, large-scale equipment involving enormous capital investment is needed. In the nitrogen fertilizer industry, enormous capital must be locked up in the provision of power houses

Table No. 5.

Capital of the companies manufacturing superphosphate of lime.

Firm names	Capital (In ¥1,000)	Paid-up capital (In ¥1,000)
Dai Nippon Fertilizer Co.	36,250	31,210
Nittō Sulphate of Soda Co.	3,300	3,300
Ōsaka Alkali Soil Co.	1,500	750
Kamijima Fertilizer Co.	1,000	700
Dai Nippon Patent Fertilizer Co.	2,500	1,750
Niigata Sulphuric Acid Co.	2,000	2,000
Tagi Fertilizer Manufacturing Co.	5,000	3,500
Rasa Industrial Co.	6,000	3,638
Sumitomo Chemical Industries Co.	20,000	12,500
Imperial Fertilizer Co.	1,250	1,000
Oriental Fertilizer Co.	200	200
Ōsaka Guano Manufacturing Co.	200	200
Nippon Fertilizer Co.	200	200
Formosa Fertilizer Co.	1,000	838
Total	**80,400**	**61,636**
Average of the fourteen companies	**5,743**	**4,402**

and chemical works. The following table gives the capital of the various sulphate of ammonia manufacturing companies affiliated to the Sulphate of Ammonia Distribution Guild, the Manchuria Chemical Industries Company, with which the Central Federation of Co-operative Purchasing Societies stands in a special relationship, and the fertilizer companies belonging to the All-Japan Calcium Cyanamide Sales Guild:—

As will be seen from the following table, the average capital of the nine sulphate of ammonia manufacturing companies amounts to ¥38,361,000 and their average paid-up capital ¥29,634,000. The average capital and paid-up capital for the nine calcium cyanamide manufacturing companies are ¥22,694,000 and ¥17,623,000 respectively.

Moreover, in the inorganic fertilizer industry, production and sales are controlled by the cartel. That is to say, the phosphatic fertilizer industry is controlled by the Phosphatic

Table No. 6.

Capitals of the companies for the manufacture of sulphate of ammonia and calcium cyanamide.

	Firm names	Capitals (In ¥1,000)	Paid-up capitals (In ¥1,000)
Sulphate of ammonia	Nippon Nitrogenous Fertilizer Co.	90,000	67,500
	Asahi Benberg Silk Co.	46,000	32,500
	Shōwa Fertilizer Co.	30,000	22,500
	Electro-Chemical Industries Co.	28,000	21,000
	Sumitomo Chemical Industries Co.	20,000	12,500
	Miike Nitrogenous Industries Co.	10,000	7,000
	Korea Nitrogenous Fertilizer Co.	60,000	60,000
	Dai Nippon Fertilizer Co.	36,250	31,210
	Manchuria Chemical Industries Co.	25,000	12,500
	Total	**345,250**	**266,710**
	Average for the nine companies	**38,361**	**29,634**
Calcium cyanamide	Nippon Nitrogenous Fertilizer Co.	90,000	67,500
	Electro-Chemical Industries Co.	28,000	21,000
	Shōwa Fertilizer Co.	30,000	22,500
	Dai Nippon Fertilizer Co.	36,250	31,210
	Daidō Fertilizer Co.	3,000	2,520
	Shin-etsu Nitrogenous Fertilizer Co.	5,000	5,000
	Hoku-etsu Hydro-Electric Co.	10,000	7,500
	Chū-etsu Hydro-Electric Co.	1,000	875
	Kokusan Fertilizer Co.	1,000	500
	Total	**204,250**	**158,605**
	Average for the nine companies	**22,634**	**17,623**

Fertilizer Guild (to which eleven companies are affiliated), organized under the Industrial Guilds Law. The control by this cartel is, however, frequently disturbed by the Tagi Fertilizer Manufacturing Company, which stands outside the Guild, and this rather ineffectual control is essentially due to the fact that in the phosphatic fertilizer industry, as already mentioned, a capitalistic monopoly is difficult to attain by reason of the very nature of this particular fertilizer. In regard to sulphate of ammonia, over 90 per cent. of the entire production is controlled by the Sulphate of Ammonia Distribution Guild. Calcium cyanamide is also under effectual control by the All-Japan Calcium Sales Guild, of which all nine calcium cyanamide manufacturing companies are members. Powerful cartels like these operate to prevent a fall in the price of nitrogen fertilizer in times of business depression, while in days of inflation boom, they operate to accentuate a rise in price. Table No. 7 gives a comparison between the price of sulphate of ammonia and that of rice which has been boasted politically in recent years.

It will be seen from the following table that, taking the average price for 1934 as 100, the recent index number of the price of sulphate of ammonia is greater than that of the price of rice. The rising tendency of the price of sulphate of ammonia has been no less marked than that of the price of rice, which, it must be mentioned, has been forced up for political reasons under the Rice Control Law.

Furthermore, in these big enterprises, the distribution of their products is rationalized as the producers think proper with the co-operation of financier capitalists, and by appointing agents by special contract or by opening branches for the sale of their goods, they fix the prices, down to those charged the final consumer, so as to ensure their own profits, on the one hand, and reduce the intermediary fertilizer merchants to the status of their commission agents, on the other, thereby making it impossible for middlemen to manipulate prices. Seeing that the fertilizer manufacturers have now gained perfect control of production and are proceeding

Table No. 7.

Comparison between the price of sulphate of ammonia and that of rice in recent years.[1]

Year and month	Sulphate of ammonia (In units of ten *kan*, or 82.8 pounds)		Rice (In units of one *koku*, or 4.96 bushels)	
	Actual price	Index number	Actual price	Index number
1934	Yen		Yen	
January	3.46		22.69	
February	3.51		23.04	
March	3.52		22.99	
April	3.59		23.70	
May	3.67		24.56	
June	3.68		25.09	
July	3.58		25.94	
August	3.45		27.50	
September	3.44		28.46	
October	3.47		30.30	
November	3.42		29.84	
December	3.49		29.18	
Average	3.52	100.0	29.11	100.0
1935				
January	3.58	101.7	29.10	111.4
February	3.89	111.1	29.84	114.2
March	3.89	111.1	29.72	113.6
April	4.18	118.7	29.19	111.8
May	4.27	121.3	29.19	111.8
June	4.24	120.4	29.04	111.2
July	4.02	114.2	29.82	114.2
August	3.99	113.3	30.37	116.3
September	4.29	121.9	31.66	121.2
October	4.52	128.4	31.31	119.9
November	4.55	129.3	30.20	115.6
December	4.65	132.1	29.01	111.1
Average	4.17	118.5	29.87	114.4

1) Note. The prices of rice in the above table represent quotations in the Fukagawa rice market in Tokyo, while the prices of sulphate of ammonia are the wholesale prices in Tokyo, made public by the Department of Commerce and Industry.

to fix selling prices arbitrarily, with the result that the ordinary exercise of commercial functions in these matters is decidedly restricted, the farmers' co-operative purchasing society is necessarily called upon to fulfil its second mission, to which reference has already been made. The only way to get the prices of fertilizers fixed fairly in the existing circumstances is to unify the purchasing power of the farmers in order to enable the co-operative purchasing society to deal effectively with monopolistic big industrial capitalists.

IV

For the successful performance of this mission of the farmers' co-operative society, it must first of all seek to control the distribution of fertilizers by rallying all farmers around it. There is a progressive increase, as is shown in the following table, in the amount of fertilizer distributed by the society and in the rate of the entry of farmers into the society.

Whereas in 1924 the amount of fertilizer disiributed by the co-operative societies constituted only 17.4 per cent. of the total quantity of fertilizer sold in that year, the proportion advanced to 28.6 per cent. in 1933. During the same period, the proportion of the members of the societies to the total number of the farm families increased from 35.4 to 52.1 per cent. It may be asked why the amount of fertilizer distributed by the societies in 1933 represented only 29 per cent. of the total quantity of fertilizer consumed in that year, when over 50 per cent. of the total number of farm families were members of the societies. This was partly because some societies did not handle fertilizer and some existed only in name, but the main cause was that many farm families belonging to the societies did not buy their fertilizers from their societies exclusively. In order to extend the scope of activity and consolidate the position of the co-operative purchasing societies, therefore, the following measures must be encouraged: (1) the full utilization of the

Table No. 8.

The amount of fertilizer distributed by the co-operative purchasing societies.[1]

Years	(A) Total of fertilizer purchased (In ¥1,000)	(B) Amount of fertilizer sold by co-operative socities (In ¥1,000)	(C) Amount of fertilizer sold by fertilizer merchants (In ¥1,000)	Fertilizer merchants		(B)/(A) Proportion of the amount distributed by co-operative societies to the total amount sold	(C)/(A) Proportion of the amount supplied by merchants to the total amount sold	(D) Membership of farmers' co-operative purchasing societies (In units of 1,000)	(E) Total number of farm families (In units of 1,000)	(D)/(E) Proportion of the members of farmers' co-operative societies to the total number of farm families
				Number	Index number	%	%			%
1924	168,431	46,741	221,690	45,685	100.0	17.4	82.6	1,958	5,531	35.4
1925	309,648	54,151	255,497	45,956	100.6	17.5	82.5	2,050	5,548	36.9
1926	339,624	58,927	280,697	46,127	101.0	17.4	82.6	2,182	5,555	39.2
1927	289,839	—	—	45,975	100.6	—	—	—	5,562	—
1928	295,306	59,698	235,608	45,895	100.5	20.2	79.8	2,321	5,576	41.6
1929	316,089	63,741	252,348	45,644	99.9	20.2	79.8	2,383	5,575	42.7
1930	244,215	55,388	188,827	45,098	98.7	21.7	77.5	2,481	5,570	44.5
1931	185,318	42,273	143,045	43,913	96.1	22.9	77.1	2,626	5,634	46.6
1932	195,772	46,340	149,432	42,131	92.2	23.7	76.3	2,693	5,642	47.6
1933	222,824	63,623	159,201	41,614	91.1	28.6	71.4	2,931	5,621	52.1
1934	228,841	77,044	151,797	40,855	89.4	33.7	66.3	—	5,617	—

1) The figures in this table were obtained from the Manual on the *Sangyō Kumiai* (Co-operative Societies) and the Manual on Fertilizers, issued by the Department of Agriculture and Forestry. The figures for 1927 are lacking.

societies by their members, (2) the affiliation of all farm families to the societies, and (3) exclusive transactions between the co-operative societies and their federations.

(Note.) It may appear from Table No. 8 that as the amount of the fertilizer distributed by the co-operative societies increased, the amount supplied by the merchants decreased, with the consequent decrease in the number of fertilizer merchants. But it must be remembered that there are other reasons for the present distress of fertilizer merchants. The changes which have come over the economic situation and structure are in no small measure accountable for it. Among these changes may be mentioned the decrease in the amount of fertilizer purchased by farmers during the past several years on account of the depression, a decline in the profit accruing to intermediary fertilizer merchants because of the rationalization of the distributive system by the capitalists who monopolize the production of fertilizer, and the disappearance of the opportunity which these merchants had of realising speculative profits by taking advantage of the ignorance of farmers and the violent fluctuations in price in the days when organic fertilizers were exclusively used.

Concerning the first-mentioned point, it is difficult to know the exact extent to which the member farmers are utilizing their societies in the purchase of fertilizers, but Table No. 9 showing the rate of utilization will be found of interest. In this table, the average consumption of fertilizer by a farm family, (A), has been worked out by dividing the total consumption of purchased fertilizer by the total number of farm families; and the average amount of fertilizer purchased by a member farmer from his co-operative society, (B), has been found by dividing the total sales of fertilizer by the societies by the number of member farmers. Then, the rate of the utilization of the societies by their member farmers, $\left(\frac{B}{A}\right)$, has been worked out.

From the following table it is satisfactory to note that there is, generally speaking, a gradual rise in the rate of utilization. It rose from 44.2 per cent. in 1926 to 54.8 per cent. in 1933. Redoubled efforts must be made hereafter to encourage the fullest utilization of the societies by their members. In this connection, it is noteworthy that the Central Federation of Co-operative Purchasing Societies is striving to establish "societies for exclusive utilization by their members."

Table No. 9.

The rate of the utilization of the societies by their members in the purchase of fertilizers.

Years	(A) Average amount of fertilizer bought by a farm family (Yen)	(B) Average amount of fertilizer bought by a member family of the co-operative society (Yen)	$\frac{(B)}{(A)}$ Rate of the utilization of the societies by their members
			%
1926	61.14	27.01	44.18
1927	—	—	—
1928	52.96	25.71	48.54
1929	56.69	26.74	47.17
1930	43.61	22.32	51.18
1931	32.89	16.10	48.95
1932	34.69	17.21	49.61
1933	39.64	21.71	54.78

Secondly, the membership of the societies must be so increased that all farm families are brought into them. There has been a steady rise in the rate of the affiliation of farm families to these societies. In 1933, the membership represented 52 per cent. of the total number of farm families in the country (see Table No. 8). Those who have so far joined the societies are mostly farmers whose livelihood is fairly secured, most of the poorer farmers still remaining outside. Such being the case, future efforts to increase membership must be attended by greater difficulties than hitherto. However, the fact that fertilizer is the most important means of production for all farmers and that all farmers, irrespective of status---be they peasant proprietor or tenant, big farmers or small----, equally benefit by the distribution of fertilizer at moderate prices will, no doubt, facilitate the process of their strong combination. Co-operative societies in the true sense of the term ought to develop in this phase of agricultural life. In order to strengthen the

combination of farmers by bringing all farm families into the co-operative societies, it is also very urgent that the *nōji jikko kumiai* (agricultural executive societies)···small village associations which are now playing no small part in the distribution of fertilizer···should be merged in the co-operative purchasing societies.[1)]

(Note 1). In 1932, the joint purchases of fertilizer by the agricultural executive societies exceeded the amount of fertilizer distributed by the *sangyō kumiai* (co-operative societies) in no fewer than sixteen prefectures. Inasmuch, however, as these executive societies operate within very limited areas and their membership is small, besides having no parent organs, they are handicapped in providing the necessary purchase funds or in the purchase of fertilizers. This is especially so in these days when the fertilizer manufacturing industry is virtually monopolised by big capitalists.

Thirdly, regarding exclusive transactions between the co-operative societies and their federations, they are steadily on the increase, as the following table shows:—

Table No. 10.

The state of exclusive transactions between co-operative societies and their federations in the distribution of fertilizers.

Years	Amount of fertilizer purchased by co-operative purchasing societies (A) (In ¥1,000)	Amount of fertilizer sold by prefectural federations of co-operative purchasing societies (B) (In ¥1,000)	Amount of fertilizer sold by the Central Federation of Co-operative Purchasing Societies (C) (In ¥1,000)	Rate of utilizing prefectural federations of co-operative purchasing societies $\frac{(B)}{(A)}$	Rate of the control of co-operative societies by the Central Federation $\frac{(C)}{(A)}$
				%	%
1926	55,787	—	3,122	—	5.6
1927	—	—	3,638	—	—
1928	56,465	15,564	5,359	27.6	9.5
1929	60,341	19,420	8,417	32.2	13.9
1930	50,295	17,120	10,368	34.0	20.6
1931	39,422	21,757	16,837	55.2	48.9
1932	44,461	29,861	31,076	67.2	69.8
1933	60,838	44,456	42,598	73.1	70.0

Note: For the figures in this table I am indebted to the 31st summary of co-operative societies, published by the Economic Recovery Section of the Department of Agriculture and Forestry.

It will be seen that the rate of utilizing the prefectural federations of co-operative purchasing societies by unit societies has witnessed a steady advance until it reached 73 per cent. in 1933. At the same time, the rate of control exercised by the Central Federation of Co-operative Purchasing Societies over the unit societies has similarly increased, it having risen to 70 per cent. in 1933. In other words, 70 per cent. (in value) of the fertilizer distributed by the unit societies in that year was supplied by the Central Federation of Co-operative Purchasing Societies. Only when the utilization of the societies becomes perfect, and the purchasing power of the unit societies is concentrated in the Central Federation of Co-operative Purchasing Societies, will the control of the distribution of fertilizer by the societies be strengthened,[1] with the result that the technical stabilization of the position of farmers in the exchange process---which is the third mission of the co-operative purchasing society, as stated at the beginning of this article---will be achieved.

The second year of the fertilizer control five-year plan of the *sangyō kumiai* (co-operative societies) closed (July, 1935), so successfully that the rate of the control of the societies by the Central Federation of the Co-operative Purchasing Societies has now risen 76.3 per cent. (ratio of the quantities supplied), and the quantity of fertilizer distributed by the *sangyō kumiai* constitutes 33.7 per cent. of the total quantity sold in Japan. Especially earnest efforts ought to be made hereafter to accomplish the first-mentioned two objects, namely, the bringing of all farm families into the purchasing societies and the exclusive utilization of the societies by their members.

(Note). According to investigations made by the Central Federation of the Co-operative Purchasing Societies (in December, 1934) regarding efficient purchasing societies, the average rate of the affiliation of farm families to the six best societies was 97.4 per cent., while the average rate of their control of the purchases of fertilizers and that of their utilization of the federation of purchasing societies were 99.2 and 90.9 per cent. respectively.

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As is clear from what I have so far stated, the *sangyō kumiai* (co-operative societies) have made a remarkable advance in recent years in the control of the distribution of fertilizers, though what they distribute forms still only 30 per cent. of the total amount purchased by the farmers. Thus, a great deal still remains to be done before perfect control of the distribution of fertilizer can be secured by the co-operative societies and, accordingly, fair fertilizer prices be obtained by setting a monopoly of fertilizer consumption against a monopoly of the production of fertilizers, which is the objective of the co-operative purchasing society movement. Seeing that the monopoly of the production of fertilizers is maintained by only a few producers and is consequently firmly established, and that the co-operative purchasing societies are a net-work embracing millions of farm families, the latter are inevitably at a disadvantage in dealing with the former. The cultivation of a strong spirit of co-operation in all farmers is, therefore, necessary in order to make up for this drawback. Moreover, as the system of co-operative purchasing societies has not yet attained that stage of development at which it can itself undertake the manufacture of fertilizers, the position of the societies as organized consumers must necessarily be weaker as against organized producers. At present, the Central Federation of the Co-operative Purchasing Societies is purchasing sulphate of ammonia from the Shōwa Fertilizer Company and the Manchuria Chemical Industries Company, calcium cyanamide from the Shōwa Fertilizer Company, superphosphate of lime from the Nitto Sulphate Soda Company, the Rasa Industrial Company, and the Dai Nippon Fertilizer Company, potassic fertilizer from the Dai Nippon Kari Potassic Fertilizer Company, broken bean cake from the Honen Oil Manufacturing Company, soya bean cake from the Mitsui and the Mitsubishi, and fish manure from various markets in Japan and Korea. Thus, in regard to fertilizers produced by big factories, there is a

direct connection between the Central Federation of the Co-operative Purchasing Societies and the fertilizer industry cartel; while as regards fetilizers produced on a small scale, the Central Federation is related to big commercial capitalists. The Central Federation of Co-operative Purchasing Societies, which does not itself undertake the production of fertilizers, runs the risk of being converted into a virtual agency for the sale of fertilizers on behalf of the fertilizer industrial cartel. The necessity of producing fertilizer on its own account being keenly felt in such circumstances, the Central Federation has already secured shares in the Manchuria Chemical Industries Company as the first step towards the final goal, so much so that it has gained a measure of control over that Company second only to that of the South Manchuria Railway Company. If the Manchuria Chemical Industries Company severs its connection with the sulphate of ammonia cartel and becomes amenable to control by the Central Federation of the Co-operative Purchasing Societies, it will become possible for the Central Federation to restrain the arbitrariness of the sulphate of ammonia cartel to a fairly large extent. Be the matter as it may, it is absolutely necessary for the Central Federation to be so developed that it can undertake the production of fertilizers on its own account and so secure an efficient control of their distribution. As a necessary preliminary to this forward step, redoubled efforts must be made to bring as many farm families as possible into the co-operative societies and to increase the rate of the utilization of the societies by their component members.

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