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MANAGERIAL ATTITUDE OF LEADING FARMERS IN JAPAN†

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I. *General Remarks*

It is frequently pointed out that the Japanese farm structure is characterized by the following: 1) small-scale family management, 2) owner-cultivator land system, 3) rice-centred farming, 4) greater proportion of part-time farming and hence greater dependence on non-farm incomes, 5) diverse government measures in support of agriculture. Although these characteristics are deeply rooted in the historical background of Japanese agriculture, they have been the cause of severe criticisms that have been levelled at Japanese agriculture.

The core of these criticisms may be formulated as follows. First, the prices of domestic farm products are relatively high in comparison with international food prices. If we look at the trend of ratio of domestic producers' prices to imported prices by agricultural sectors, as Table 1 shows, domestic farm products exceed by far imported products in their prices.

Second, the immense volume of government expenditures on agriculture has reached an intolerable level. The share of the total agricultural budget to the total national budget fluctuated from about 7% to about 11% during 1960–1980. Although the share began to decrease since 1970, the share of the farm products to the net domestic production declined rapidly during the post-war economic expantion, and there is a criticism that the national budget has attached too much weight to the agriculture.

Third, farmers are ignorant of the market trends of their products, and it is necessary for them to acquire a "market-mind attitude." This argument can be applied to some agricultural sector which has been deeply included in governmental price support systems such as a rice sector. From this view point, the introduction of market-price mechanisms to farm management is widely considered to be a matter of urgent concern. By and large, such criticisms as these point out that Japanese agriculture has been retarded far behind of Japanese industrialization in the post-war period.

On the other hand, there is an equally widely-held opinion that agriculture is a fundamentally weak and vulnerable industry as compared with other industries, and it is therefore right for the government to support and protect agriculture. Such a point of view takes into account the important rôle that agriculture plays in supplying the nation's foodstuffs. It is important to consider a close linkage between this argument and political factors (K. Henmi,

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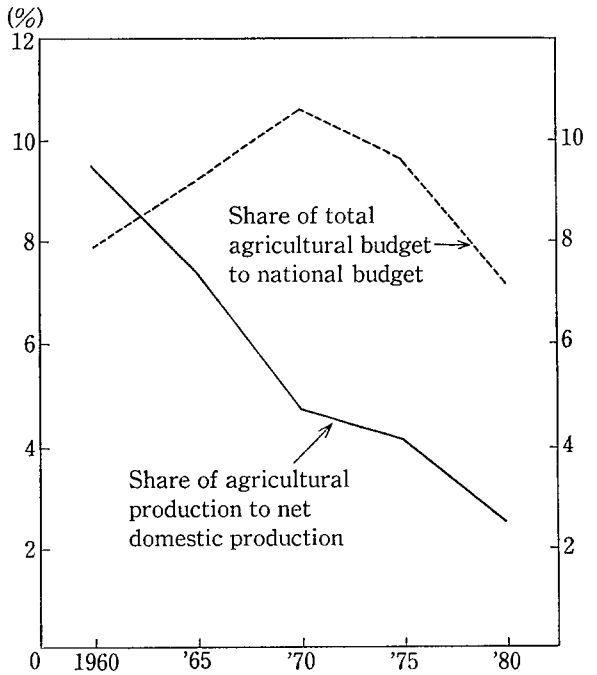
TABLE 1. PRICES OF DOMESTIC AND IMPORTED AGRICULTURAL PRODUCTS. 1935–78

Year	Ratio of domestic producers' prices to import prices						Exchange rate (yen/dollar)
	Rice	Wheat	Soybeans	Butter	Beef	Pork	
1935	200	102	121	175	—	—	3.5
1951	85	69	66	222	—	—	360
1955	113	130	149	178	—	—	360
1960	134	150	158	173	144	133	360
1964	167	182	169	162	—	—	360
1970	298	209	207	239	156	119	360
1975	264	166	167	215	242	135	308
1978	404	446	354	382	247	108	201

Source: Egaitsu, 1982, p. 157.

FIG. 1. SHARE OF AGRICULTURE



Source: Norin Suisansho, 1983, pp. 10–11, 14.

1982). One of the fundations of Japan's ruling Liberal Democratic Party is popular votes in rural communities. In hope of attracting rural votes, the LDP and opposition parties have designed proposals that offer protective measures for the interests of farmer (Reich and Endo, 26–27).

Disputes concerning Japanese agriculture are not confined to the above-mentioned matters, but spread over diverse dimensions, such as how to improve the present low level of

self-sufficiency,[1] how to evaluate the overwhelmingly high proportion of part-time farming,[2] and how to enlarge the scale of management.[3] It is not an easy problem to modernize farm structure in a short period. But it is necessary to begin framing plans for the future of Japanese agriculture.[4] One effort in this direction is a report of the Agricultural Policy Council, entitled *Basic Direction of Agricultural Policies in the 1980's.*

In this paper we will concentrate our interest on the managerial attitude of "leading Japanese farmers" and investigate their managerial a potentialities, by illustrating data collected by our research.

Rather simple analytical framework that managed our research can be formulated as follows: First, although full-time farmers are in minority, the importance of their farm management can not be overstressed. It is full-time farmers who deliberate on the future course of farm management seriously. Second, it goes without saying that the actual farm production is carried out having direct and indirect connection with rural community. In the face of socio-economic changes of rural community powerful leadership is essential in the innovation of farm management and some of the full-time farmers often took the initiative in vitalization of farm management. Third, the managerial attitude of these leading farmers will have a crucial importance in predicting the future of Japanese agriculture. Fourth, it is simply in consideration of the feasibility of research that we confine our research to the farmers included in the system of "Nōgyōshi."

If we could clarify and classify the attitudes of leading farmers, we might be able to suggest more detailed and efficient policies toward promoting the managerial development.

II. *Outline of Research on Leading Farmers*

1 System of "Nōgyōshi" (master of agriculture) in Diffusion Policies

We selected as the object of our research a group of farmers who were granted by a local government the title of "Nōgyōshi" (master of agriculture). Although the system of "Nōgyōshi" has been put into operation in almost all of the preferctures in Japan, this system has yet not been adequately researched.[5] So it is appropriate to outline briefly this system. Originally this system was started in 1967 in Nagano Prefecture, but the details of its origin were not evident. Many prefectures in Japan followed the example of Nagano Prefecture and adopted this system in their local agricultural policies.

[1] Level of food self-sufficiency can be estimated differently according to the methods adopted (Ogura, 1981, pp. 226–232). Here it is sufficient to exhibit the fact that the self-sufficiency ratio of grain in 1980 is 29% (*Statistical Supplement to White Paper on Agriculture*, 1983, p. 61).

[2] According to *Census of Agriculture and Forestry, 1980*, 86.6% of the whole farmers in Japan are part-time farmers, and this is one of the weaknesses of Japanese agriculture.

[3] Generally speaking, the amount of the transfer of ownership of cultivated land by purchases was not large. It is quite difficult for the farmers intending to enlarge their management by purchases of farm lands owing to the skyrocketed farm land prices. This difficulty was strengthened by the fact that part-time farmers were not obliged to sell their lands. Further more, it is said that the tentative lenders of lands have a persistent tendency to avert the endurement of the tenure of a tenant farmer and they are likely to give a contract for cultivation. See a detailed survey of Imamura (1983) on the recent land tenancy and cultivation contracts.

[4] Ogura (1981), in concluding his voluminous books, states that "Japanese agriculture will survive, but only with great difficulty, ... The whole issue of whether Japanese agriculture can survive depends upon the will of the nation" (p. 642).

[5] Sambe (1983) studies this system from the view point of the application of this system.

In 1977, the Ministry of Agriculture and Forestry issued an "Outline of Measures for Diffusion of Agricultural Improvements" to each local office of Agriculture and Forestry.[6] In this outline, the system of "Nōgyōshi" was built for the first time into national agricultural policies. This outline pointed out the recent decline of circumstances surrounding farm management and proposed to settle these matters according to the regional situations. It emphasized the importance of the following measures: firstly, to secure the agricultural production to meet the trends of demand, secondly, to foster the farm managements with high productivity, and thirdly, to secure the "Ninaite" (backbone) of the agricultural production.

Such measures for the diffusion of agricultural improvements have the aim to contribute to the development of efficient agricultural technology and the growth of farm production. Many measures were designed to attain this aim in the outline of 1977 mentioned in the above, and the measure "to promote the activities of rural youth" was named as sixth of these measures. The purpose of the measure "to promote the activities of rural youth" was to contribute to foster and ensure capable successors to farm managements. According to the outline, this purpose would be attained by arranging the following items for rural youth: 1) education on the technology and other facts about agriculture and farm life, 2) promotion of voluntary group activities, and 3) consolidation of the facilities necessary for these activities.

The system of "Nōgyōshi" was designed as one of the necessary components of the measure "to promote the activities of rural youth." The system has been divided into two sub-systems. First is the measure to foster "Seinen Nōgyōshi" (youth master of agriculture). Second is the measure to promote activities of "Shidō Nōgyōshi" (leading master of agriculture).

The former sub-system is to grant the title of "Seinen Nōgyōshi" to qualified rural youth, not only to give them an incentive to join in the education and training of themselves and other rural youth, but also to cultivate their personal development and to help shape the direction of their voluntary activities as well. This sub-system intends, at the same time, to encourage them to hold meeting to discuss the managerial and regional problems they are confronting, and to visit and inspect the advanced regions.

The second sub-system involves the granting of the title "Shidō Nōgyōshi" to a farmer who has demonstrated sound farm management and who is playing an important rôle in the piloting of rural youth through his farm management. This sub-system is intended to heighten the social evaluation of these farmers and to encourage activities aimed toward the fostering and instructing of rural youth. At the same time, this sub-system aims to encourage the farmers to exchange information and engage in other voluntary activities among themselves.

The farmers under this system are expected by each local government to play a leading rôle in the rural society where they live. We have chosen to call them in this paper "leading farmers," and we consider them as being a group of farmers who are expected to lead Japanese farm management. There may be other farmers who are not granted the title of "Nōgyōshi," but who are nevertheless achieving remarkable results in their farm management. It is frequently pointed out that the farmers being left out in this system of "Nōgyōshi" have enough potential to innovate farm management.[8] It is simply in consideration of the feasibility of

[6] This outline was issued as circular notices in the name of the Vice-Minister of Agriculture and Forestry to each local Office of Agriculture and Forestry on 12 August, 1977.

[7] National meeting of "Nōgyōshi" was arranged annually since 1979 to exchange information.

[8] Interview by the author with H. Horikoshi, President of Nagano Nōbunkyō, 25 December, 1981.

TABLE 2. NUMBER OF RESPONDENTS

(persons, %)

Prefecture	Leading Master of Agriculture			Youth Master of Agriculture		
	number sent	number of respondents	rate of response	number sent	number of respondents	rate of response
Hokkaido	89	65	73.0	117	84	71.8
Aomori	43	29	67.4	158	98	62.0
Iwate	32	27	84.4	54	40	74.1
Miyagi	50	35	70.0	150	64	42.7
Akita	96	64	66.7	54	35	64.8
Yamagata	72	47	65.3	209	126	60.3
Fukushima	120	71	59.2	383	273	61.9
Ibaragi	172	93	54.0	—	—	—
Tochigi	95	53	55.8	—	—	—
Gunma	99	53	53.5	376	193	51.3
Saitama	150	89	59.3	—	—	—
Chiba	160	87	54.4	245	139	56.7
Tokyo	—	—	—	—	—	—
Kanagawa	287	142	49.5	—	—	—
Niigata	84	58	69.1	446	259	58.1
Toyama	60	42	70.0	368	211	57.3
Ishikawa	—	—	—	113	73	64.6
Fukui	52	33	63.5	83	33	39.8
Yamanashi	64	42	65.6	84	48	57.1
Nagano	—	—	—	683	333	48.8
Gifu	80	54	67.5	334	184	55.1
Shizuoka	150	96	64.0	156	106	68.0
Aichi	140	88	62.9	408	200	49.0
Mie	104	56	53.9	—	—	—
Shiga	61	42	68.9	31	23	74.2
Kyoto	59	40	67.8	—	—	—
Osaka	—	—	—	—	—	—
Hyogo	66	37	56.1	—	—	—
Nara	—	—	—	—	—	—
Wakayama	127	73	57.5	318	164	51.6
Tottori	123	80	65.0	—	—	—
Shimane	92	67	72.8	84	53	63.1
Okayama	108	67	62.0	253	150	59.3
Hiroshima	45	33	73.3	183	125	68.3
Yamaguchi	80	58	72.5	58	27	46.6
Tokushima	95	50	52.6	146	80	54.8
Kagawa	100	59	59.0	101	45	44.6
Ehime	10	9	90.0	299	173	57.9
Kochi	—	—	—	123	65	52.9
Fukuoka	52	30	57.7	60	38	63.3
Saga	81	48	59.3	81	45	55.6
Nagasaki	86	48	55.8	89	50	56.2
Kumamoto	128	76	59.4	566	313	55.3
Oita	55	35	63.6	—	—	—
Miyazaki	117	67	57.3	—	—	—
Kagoshima	175	102	58.3	443	229	51.7
Okinawa	35	21	60.0	39	30	51.3
Total	3,914	2,366	60.5	7,245	4,063	56.1

Note: — represents there is no system being in operations at the time of our survey.

research that we confine our research to the farmers included in this system of "Nogyoshi."

2 Mail Survey of Leading Farmers

Questionnaires were sent to all the farmers granted the title of "Nōgyōshi" in January 1982. The total number of them accounted to 11,159, and 6,429 farmers returned the questionnaire by March 1982. Table 2 shows the number of leading farmers and respondents by Prefecture. The rate of response was quite high. Data shown in this paper is based on these collected questionnaires. Before the analysis of the data we must sum up briefly the format of the questionnaire.

Framework of the questionnaire is constructed in the following manner. Firstly, we asked the subjects pertinent personal questions relating to the qualifications and experience, questions such as age, duration of farm management and previous experience in non-farm occupations. Secondly, we asked questions dealing with such primary farm management concerns as major farm product, total value of farm sales, scale of managing land, ratio of managed to borrowed land, and number of persons working on the farm. Thirdly, we asked various questions relating to their attitude towards their management of their farm. Questions about their managerial attitude may be classified into three levels: 1) on what kind of basic values they are based, 2) how they evaluate their present management situation, and 3) what kind of tactics they are planning to adopt towards future managerial development.

The questionnaire was a multiple-choice questionnaire that required respondents to check the appropriate answer or answers from a list of possible responses. After completing the questionnaire respondents returned it through the mail.

3 Managerial Characteristics of Leading Farmers

We would like to begin with the analysis of the data collected by showing main characteristics of leading farmers. By comparing our data with that of official statistics such as the *Agricultural Census*, we can get an idea about the relative rank of leading farmers among Japanese farmers as a whole.

The management of leading farmers exhibits several striking contrasts with that of Japanese farmers as a whole. Firstly, the difference of the dependency of farm household income on farm management is noteworthy. It is customary statistical practice to classify farm households into three categories: 1) full-time farm households, 2) part-time farm households that depend mainly on farm management for their income (which we designate as the 1st type of part-time farm households), and 3) part-time farm households which depend mainly on non-farm occupations for their income (which we designate as the 2nd type of part-time farm households). Although a larger number of Japanese farm households depends on non-agricultural occupations for the greater part of their income, almost all of leading farmers are dependent on farm management for their household income, as shown in Table 3. The fact that almost all of our respondents are full-time farmers must be kept in mind in the interpretation of our data.

Secondly, we must consider the labour force involved in farm management. Table 4 shows percentages dealing with the number of persons per farm household engaged entirely in the operation of the family farm. This Table indicates that most of the farm households in Japan are managed by only one person not engaged full-time in agriculture, whereas a larger part of the farms of leading farmers are managed by three or more persons engaged exclusively

TABLE 3. PERCENTAGE OF FARMERS BY HOUSEHOLD CLASSIFICATION

(%)

Household Classification	All Farmers in Japan (1)	Leading Farmers (2)
Full-time	13.4	68.5
1st Type of Part-time		
Head of Household is full-time	14.1	23.5
Head of Household is part-time or other	7.4	5.1
2nd Type of Part-time		
Head of Household is full-time	4.8	1.6
Head of Household is part-time or other	60.3	1.3
Total	100.0	100.0

Notes: (1) Ministry of Agriculture, forestry and Fisheries, *Census of Agriculture and Forestry, 1980.*
(2) Data based on our mail survey.

TABLE 4. PERCENTAGE OF FARM HOUSEHOLDS BY LABOUR FORCE PER FARM

(%)

Labour Force of a Farm		All Farmers in Japan (1)	Leading Farmers (2)
Having person(s) engaged full-time	1 person	16.8	6.9
	2 persons	22.5	42.1
	3 and more persons		49.9
Having no person engaged full-time		60.7	1.1
Total		100.0	100.0

Notes: (1), (2) Same as Table 3.

TABLE 5. TOTAL SALES VALUES PER FARM HOUSEHOLDS

(%)

Total Sales Values (Million Yen)	All Farmers in Japan (1)	Full-Time Farmers with Male under 60 years old (1)	Leading Farmers (2)
Less than 1.5	74.3	24.3	1.0
1.5– 2.0	6.9	9.5	1.2
2.0– 3.0	7.1	15.0	3.8
3.0– 5.0	6.2	20.4	14.8
5.0– 7.0	2.6	12.2	18.1
7.0–10.0	1.4	7.9	20.3
10.0–15.0	0.8	5.2	17.2
More than 15.0	0.7	5.5	23.6
Total	100.0	100.0	100.0

Notes: (1), (2) Same as Table 3.

in the management of the farm. It may be said that the farms managed by leading farmers are operated by a larger and better labour force as compared with the average Japanese farm.

Thirdly, if we look at the scale of sales values of farm products of Japanese farmers, leading farmers occupy the higher ranks of sales values, as shown in Table 5.

TABLE 6. PERCENTAGE OF FARMERS BY PRIMARY PRODUCT

(%)

Primary Product	All Farmers in Japan (1)	Leading Farmers (2)
Rice	60.0	13.2
Wheat	0.7	0.2
Other Cereals, potatoes, or beans	2.9	0.7
Industrial Crops	6.5	3.9
Horticulture	2.8	19.3
Vegitables	6.6	11.4
Fruits	9.2	15.9
Other Crops	2.5	6.1
Dairy	1.9	13.2
Beef Cattle	2.3	6.5
Pigs	1.2	5.4
Chickens	0.6	2.2
Other Livestock	0.1	0.1
Sericulture	2.7	2.1
Total	100.0	100.0

Notes: (1), (2) Same as Table 3.

Fourthly, the distribution of the primary farm product (the farm management's largest sales value product) must be mentioned. The distribution of the primary farm product by leading farmers is somewhat different from that of Japanese farmers as a whole. As mentioned above, Japanese agriculture is heavily centred on rice cultivation, but the proportion of respondents mainly engaged in rice cultivation is rather small, and conversely the proportions of leading farmers in other farm sectors, such as horticulture and dairy, are relatively high among the respondents of our mail survey.

These characteristics all serve to indicate that leading farmers are managing their farms successfully and thus are placed in the top rank of Japanese farmers. At the same time we must take care to note that our respondents do not represent the structure of Japanese agriculture as a whole, as the data collected here has been drawn from only a limited group of farmers. Let us now analyse the characteristic of the attitude of the leading farmers.

III. *Basic Values of Leading Farmers*

Decision-making on specific managerial matters may be directly or indirectly influenced by the basic values to which a farmer ascribes. We would like to show several representative kinds of such basic values in the following.

1. Agrarianism

As the first question of our questionnaire we asked leading farmers their opinion concerning agrariasism. Table 7 is a crosstabulation of their opinions by age. About 70% of leading farmers supported the opinion that "agriculture is the foundation of a nation and it is an industry to which great importance must be attached." It is quite natural for the farmers to show an inclination to justify themselves and their job. The high proportion of affirmative

TABLE 7. AGRARIANISM AND AGE

(persons, %)

Age	Agrarianism			
	Agriculture is not a special industry	Agriculture is the most important of industries	No response	Total
Under 30	372 (38.7)	586 (60.9)	4	962 (100.0)
30–39	1,015 (32.7)	2,077 (67.0)	10	3,102 (100.0)
40–49	228 (22.3)	790 (77.3)	4	1,022 (100.0)
50–59	221 (20.3)	866 (79.4)	3	1,090 (100.0)
Over 60	44 (23.3)	145 (76.7)	0	189 (100.0)
No response	13	44	2	59
Total	1,893 (29.4)	4,513 (70.2)	23	6,429 (100.0)

TABLE 8. AGRARIANISM AND PRIMARY PRODUCTS

(persons, %)

Primary Products	Agrarianism			
	Agriculture is not a special industry	Agriculture is the most important of industries	No response	Total
Rice	221 (26.2)	619 (73.4)	3	843 (100.0)
Wheat	2 (16.7)	9 (75.0)	1	12 (100.0)
Other Cereals	8 (18.6)	35 (81.4)	0	43 (100.0)
Industrial Crops	78 (31.0)	174 (69.0)	0	253 (100.0)
Horticulture	417 (34.0)	805 (65.6)	5	1,227 (100.0)
Vegitables	245 (33.5)	484 (66.2)	2	731 (100.0)
Fruits	305 (30.1)	706 (69.7)	2	1,013 (100.0)
Other Crops	130 (33.1)	261 (66.4)	2	393 (100.0)
Dairy	195 (23.0)	649 (76.6)	3	847 (100.0)
Beef Cattle	92 (22.1)	325 (77.9)	0	417 (100.0)
Pigs	91 (26.2)	253 (72.9)	3	347 (100.0)
Chickens	59 (41.3)	83 (58.0)	1	143 (100.0)
Other Livestock	3 (42.9)	4 (57.1)	0	7 (100.0)
Sericulture	40 (32.3)	83 (66.9)	1	124 (100.0)
No response	7	23	0	30
Total	1,893 (29.4)	5,513 (70.2)	23	6,429 (100.0)

response can be interpreted as an expression of the farmers' pride in their work and the important rôle they play in society. But it must be pointed out that a slight change is underway. According to Table 7, the ratio of persons who do not approve of agrarianism is relatively high among the younger generation. This is one of the symptom of the gap between generations concerning the attitude of farm management.

If we look at the distribution of opinion concerning agrarianism according to the primary products of the farm managements, it may be possible to formulate that farmers engaged in these sorts of production deeply integrated into governmental price-support policies have the tendency to support agrarianism and the farmers actively competing in a free-market have

the opposite tendency. However, as Table 8 shows, the difference of opinion between generations and between farmers engaged in the production of different primary products are not so great to warrant any further examination on our part.

2. Feeling about their Daily Work

We asked leading farmers about their feeling about their daily work, aside from the remunerative rewards of their farm management. The possible responses were: 1) it is pleasant to work with the soil and with living creatures, or 2) it is disagreeable to work with the soil and with living creatures. The distribution of answers to this question is shown in Table 9.

The number of farmers who feel their daily work is "pleasant" account for 56.6% of all leading farmers, thus the ratio of "pleasant" exceeds that of "disagreeable." At the same time, it is quite interesting that among the younger respondents the percentage of "disagreeable" responses was quite high, while among older respondents there was a high percentage of "pleasant" responses. Although the younger generation is expected to continue and expand current farm management in the future, the fact that the response "disagreeable" was so common among younger generation may not augur well for the future of Japanese farming.

3. Conception of Management Succession

The number of farm households has remained almost constant since the Meiji Era. The traditional practice of having the eldest son succeed in the management of the family farm played an important rôle in the consistency of farm management. However, the process of post-war industrialization and rapid economic growth had a great impact on such traditional practices, and as a consequence, the number of farm households began to decline drastically, as indicated in Table 10.

At the root of this decrease in number of farm households, there might be a gradual change of opinions regarding farm succession.[9] To investigate this matter, we framed the fol-

TABLE 9. FEELING ABOUT DAILY WORK BY AGE

(persons, %)

Age	Feeling about Daily Work			
	Disagreeable	Pleasant	No Response	Total
Under 30	430 (44.5)	522 (54.0)	15	967 (100.0)
30–39	1,497 (48.3)	1,553 (50.1)	52	3,102 (100.0)
40–49	423 (41.4)	584 (57.1)	15	1,022 (100.0)
50–59	297 (27.2)	784 (71.9)	9	1,090 (100.0)
60–64	26 (17.3)	122 (81.3)	2	150 (100.0)
Over 65	6 (15.4)	33 (84.6)	0	39 (100.0)
No Response	14	42	3	59
Total	2,693 (41.9)	3,640 (56.6)	96	6,429 (100.0)

[9] It goes without saying that the main causes of this decrease in number of farm households were the expansion of the post-war economy that offered ample job opportunities for the farmers and the process of urbanization that diverted farm lands into non-agricultural uses (Akino *et al*, 1978, p. 66).

TABLE 10. NUMBER OF FARM HOUSEHOLDS

(1,000 Households)

Year	Number of Farm Households			
	Total	Full-time	1st Type Part-time	2nd Type Part-time
1950	6,176	3,086	1,753	1,337
1955	6,043	2,105	2,275	1,663
1960	6,057	2,078	2,036	1,942
1965	5,665	1,219	2,081	2,365
1970	5,402	845	1,814	2,743
1975	4,953	616	1,259	3,078
1980	4,661	623	1,002	3,036

Source: Ministry of Agriculture, Forestry and Fisheries, *Census of Agriculture and Forestry, 1980.*

TABLE 11. OPINIONS REGARDING FARM SUCCESSION BY AGE

(persons, %)

Age	Opinions regarding Farm Succession					
	Persuade a son	Adoption	Entrust	Give up	No response	Total
Under 30	329 (34.0)	8 (0.8)	227 (23.5)	391 (40.4)	12	967 (100.0)
30–39	992 (32.0)	43 (1.4)	896 (28.9)	1,142 (36.8)	29	3,102 (100.0)
40–49	421 (41.2)	33 (3.2)	291 (28.5)	262 (25.6)	15	1,022 (100.0)
50–59	541 (49.6)	32 (2.9)	302 (27.7)	200 (18.3)	15	1,090 (100.0)
60–64	84 (56.0)	2 (1.3)	29 (19.3)	31 (20.7)	4	150 (100.0)
Over 65	27 (69.2)	1 (2.6)	3 (7.7)	8 (20.5)	0	39 (100.0)
No response	30	1	13	12	3	59
Total	2,424 (37.7)	120 (1.9)	1,761 (27.4)	2,046 (31.8)	78	6,429 (100.0)

lowing question:

"Please check the most appropriate answer, disregarding whether your family does or does not have a successor to your farm management. If your son informed you that he has no intention of succeeding the management of your family farm, what would you do?" The answers to be checked are as follows:

1) to try to persuade the son to succeed to the farm management,
2) to grant the management to a legally adopted son,
3) to entrust the management to another able farmer,
4) to give up farming,
5) other.

The results are shown in Table 11. As indicated in Table 11, we can find out that 37.7% of all leading farmers strongly persist in the traditional concepts of management succession, and 31.8% would choose to give up their management. It may be surprising that the traditional conception was held by quite a low percentage of leading farmers. Furthermore, if we look at the distribution of responses by age group, there is quite a distinct difference between age groups. By and large, the younger age group has a tendency to break from traditional attitudes, and the older age group is inclined to persist in traditional concepts about management succession.

IV. *Attitude Toward Farm Management*

1. Natural Restriction and Agricultural Technology

Generally speaking, farm production largely depends on natural circumstances, such as climate, soil, and the conditions of plants and animals. Human beings have a long history of controlling and managing the unfavourable conditions to make them fit for food production.

In the process of adaptation to new agricultural technology, the attitude of farmers toward natural restraints is considered of great importance. We asked leading farmers which attitude they have, that they control natural restraints or that they must adjust themselves to natural circumstances. The distribution of the responses to this question is shown in Table 12.

As Table 12 shows, a little more than 70% of all leading farmers takes the attitude that it must control natural circumstances. But we must take note to the fact that if we compare the responses to this question by respondents of the younger generation (under 40 years old) and the older generation (between 40–60 years old), the attitude of the older generation is slightly more positive than that of the younger generation. This tendency is also confirmed by the response to the question relating genetic engineering.

The question concerning genetic engineering is as follows:
"New plants and animals are coming to be generated by genetic engineering research. How do you feel about the introduction of such new technology as genetic engineering to agricultural production?" Respondents are requested to check the closest answer in the following:
1) As it would be beneficial for agricultural development to introduce such technology, it must be introduced positively.
2) Although the introduction of such technology will have good effects on farm management, such technology must be dealt with carefully.
3) Such technology is not considered to be desirable for agriculture.
4) The introduction of such technology is ill-suited for agriculture.
5) Cannot answer the question because of lack of understanding of such technology.

Table 13 shows a crosstabulation of the response by age. Again, there is some difference between age groups. The various under-40 age groups tend to be rather negative in

TABLE 12. NATURAL RESTRAINTS AND AGE

(persons, %)

Age	Natural Restraints			
	Control	Adjust	No response	Total
Under 30	681 (70.4)	281 (29.1)	5	967 (100.0)
30–39	2,117 (68.2)	960 (30.9)	25	3,102 (100.0)
40–49	755 (73.9)	259 (25.3)	8	1,022 (100.0)
50–59	851 (78.1)	227 (20.8)	12	1,090 (100.0)
60–64	114 (76.0)	33 (22.0)	3	150 (100.0)
Over 65	24 (61.5)	15 (38.5)	0	39 (100.0)
No response	44	13	2	59
Total	4,586 (71.3)	1,788 (27.8)	55	6,429 (100.0)

TABLE 13. GENETIC ENGINEERING AND AGE

(persons, %)

Age	Response to Genetic Engineering						
	introduce positively	careful treatment	not desirable	ill-suited	don't know	no response	Total
Under 30	203 (21.0)	538 (55.6)	52 (5.4)	10 (1.0)	157 (16.2)	7	967 (100.0)
30–39	812 (26.2)	1,592 (51.3)	169 (5.4)	35 (1.1)	469 (15.1)	25	3,102 (100.0)
40–49	357 (34.9)	467 (45.7)	49 (4.9)	9 (0.9)	130 (12.7)	10	1,022 (100.0)
50–59	366 (33.6)	465 (42.7)	38 (3.5)	11 (1.0)	197 (18.1)	13	1,090 (100.0)
60–64	58 (38.7)	61 (40.7)	3 (2.0)	1 (0.7)	26 (17.3)	1	150 (100.0)
Over 65	17 (43.6)	14 (35.9)	2 (5.1)	0 (0.0)	6 (15.4)	0	39 (100.0)
No response	20	23	5	0	10	1	59
Total	1,833 (28.5)	3,160 (49.2)	318 (4.9)	66 (1.1)	995 (15.5)	57	6,429 (100.0)

TABLE 14. ADOPTION OF NEW TECHNOLOGY AND AGE

(persons, %)

Age	Adoption of New Technology						
	Earliest	Earlier	Average	Later	No experience	No response	Total
Under 30	98 (10.1)	479 (49.5)	296 (30.6)	54 (5.6)	34 (3.5)	6	967 (100.0)
30–39	505 (16.3)	1,682 (54.2)	712 (23.0)	119 (3.8)	64 (2.1)	20	3,102 (100.0)
40–49	281 (27.5)	600 (58.7)	110 (10.8)	20 (2.0)	2 (0.2)	9	1,022 (100.0)
50–59	362 (33.2)	602 (55.2)	96 (8.8)	18 (1.7)	3 (0.3)	9	1,090 (100.0)
60–64	62 (41.3)	68 (45.3)	16 (10.7)	1 (0.7)	1 (0.7)	2	150 (100.0)
Over 65	18 (46.2)	16 (41.0)	3 (7.7)	1 (2.6)	1 (2.6)	0	39 (100.0)
No response	13	33	11	1	0	1	59
Total	1,339 (20.8)	3,480 (54.1)	1,244 (19.3)	214 (3.3)	105 (1.6)	47	6,429 (100.0)

their evaluation of genetic engineering, and more than half of these age groups insists that the technology must be treated carefully. On the other hand, the age groups of over 40 years old show a relatively high proportion of affirmative attitudes toward genetic engineering.

Even more important facts were discovered relating to the timing of adoption of new technology. We asked leading farmers question concerning the timing of the adoption of new crops and of new methods of farming. The answer to be checked is as follows: 1) earliest, 2) earlier, 3) average, 4) later and 5) no experience.

As Table 14 illustrates, those who opted for "earliest" and "earlier" accounted for 20.8% and 54.1% respectively, and most of leading farmers would choose to be early in the adoption of new agricultural technology. It is, however, a curious fact that the younger generation shows a rather conservative attitude toward the adoption of new technology, whereas the older generation is more inclined to adopt new technology quickly.

As formulated by E. Rogers (1962), the younger generation is generally thought to be more positive and innovative in attitude. But our data gives us results contrary to the statements of E. Rogers. Although the younger generation as a whole has new basic values and tends to be free from old and traditional value systems, younger farmers indicated quite negative responses in matters concerning natural restraints and new technology.

This negative attitude of the younger generation is quite important in making predictions

about Japanese agriculture in the future. But our research does not examine the reasons for this negative tendency of the younger generation, and the problem remains to be solved by other field research.

2 Distinction of Daily Life and Farm Management

Japanese agriculture is based on family farm management. There are, however, several opposing views concerning the separation of daily life and farm management. One work that has been quite seminal in the formulation of those opposing views is Akira Tamaki's *Nihon no Shakai Shisutemu* (The Social System in Japan), 1982. According to Tamaki, the economy of farm households can be divided ideally into two types: one is an "economy based on stock," and the other is an "economy based on flow." In the type of an "economy based on stock," the stock of the farm household is the origin and aim of the household economy. In this type of farm management, farm labour by family members is deeply integrated into the family's daily life, and they are themselves directed to sustain and multiply the real stock of the household. A flow chart suggested by the Tamaki economic view is illustrated in Fig. 2.

On the other hand, if the economy of farm household is "based on flow," farm management is one of the ways of supporting family life, and the acquisition of money income is family's goal. The members of the family have the choice of working on farm or of getting non-agricultural jobs according to size of income required. Regardless of the ratio of dependency of family income to farm management, farm management is one of the ways to bring necessary income, and thus there is a distinction made between daily life and farm management. A flow chart of this economy is shown in Fig. 3.

FIG. 2. ECONOMY BASED ON STOCK

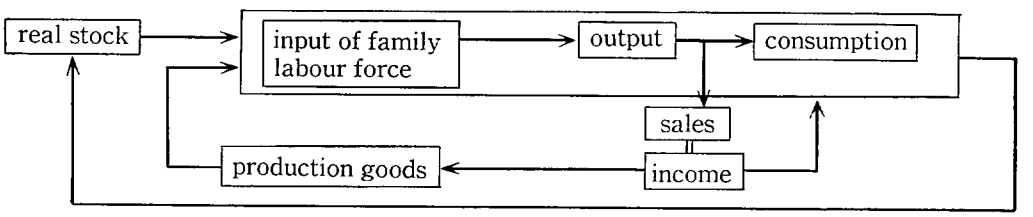
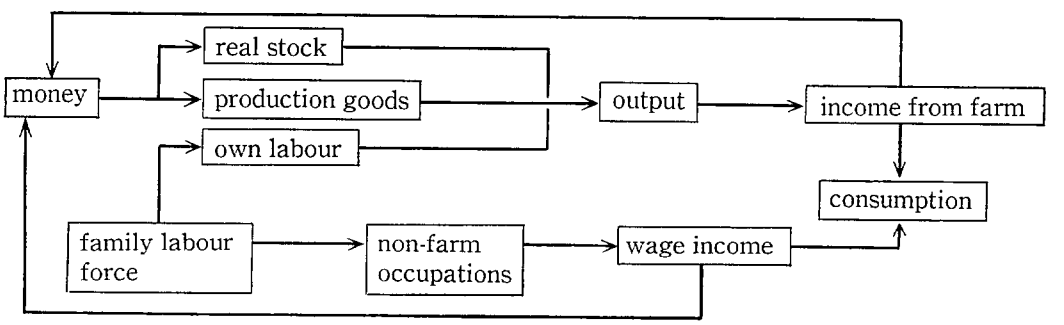


FIG. 3. ECONOMY BASED ON FLOW



Presuming that these two types of farm household economy are possible, almost all of the Japanese farm households are now taking an "economy based on flow," and as a principle, the distinction is quite clearly made between daily life and farm management.

Nevertheless, as Table 15 shows, about 65% of all leading farmers are inclined to think that their daily life and farm management are deeply integrated with each other. This inclination is more strongly evident among the older generation than among the younger generation.

Table 16 shows the opinions concerning the separation of daily life and farm management according to scales of total sales value. Table 16 indicates that there is a correlation between the scale of sales value and the difference of opinions. It is impossible to formulate the causal relation but it clear that as the sales value grows larger, the tendency to think of daily life and farm management as separate entities grows higher.

3. Attitude toward Price-support Policies

Closely connected with the relatively high prices of Japanese farm products is the current frequently-heard opinion that the range of governmental interventions in farm products must be reduced. It is not our purpose to explain our standpoint on this matter, but rather to show the attitudes held by leading farmers toward the governmental price-support pocilies. Our

TABLE 15. SEPARATION OF DAILY LIFE AND MANAGEMENT BY AGE

(persons, %)

Age	Separation of Daily Life and Management			
	Integrated	Separated	No response	Total
Under 30	609 (63.0)	357 (36.9)	1	967 (100.0)
30–39	1,926 (62.1)	1,149 (37.0)	27	3,102 (100.0)
40–49	664 (65.0)	348 (34.1)	10	1,022 (100.0)
50–59	771 (70.7)	312 (28.6)	7	1,090 (100.0)
60–64	112 (74.7)	36 (24.0)	2	150 (100.0)
Over 65	31 (79.5)	8 (20.5)	0	39 (100.0)
No response	42	13	4	59
Total	4,155 (64.6)	2,223 (34.6)	51	6,429 (100.0)

TABLE 16. SEPARATION OF DAILY LIFE AND MANAGEMENT BY SALES VALUE

(persons, %)

Sales Value (¥10,000)	Separation of Daily Life and Management			
	Integrated	Separated	No response	Total
Under 500	969 (73.3)	335 (25.3)	18	1,322 (100.0)
500–700	798 (69.2)	347 (30.1)	8	1,143 (100.0)
700–1000	847 (65.4)	437 (33.7)	11	1,295 (100.0)
1000–1500	690 (62.9)	400 (36.5)	7	1,097 (100.0)
Over 1500	814 (54.2)	682 (45.4)	7	1,503 (100.0)
No response	37	22	0	59
Total	4,155 (64.6)	2,223 (34.6)	51	6,429 (100.0)

question was as follows:
"It is believed by some that the prices of farm products should be determined by free-market, instead of by fixed prices resulting from government intervention. What is your opinion about this statement (or about the introduction of a free-market mechanism)?"
Respondents were requested to check one or two answers among the following:
1) Such a policy would be desirable because it would give one a chance to display one's managerial ability.
2) It would be troublesome because of the fluctuation of prices.
3) It would not give the farmers any benefit but merely enrich the distributors.
4) It would be desirable because it would help weed out inefficient farm managements.
5) It would become hard to continue management because it would enhance disharmony among farmers.

As shown in the above, this question is framed for multi-response, and we must consider the consistency of the two checked answers. We divided the respondents into three factions: pro-free-market, anti-free-market, and middle-of-the-road. The farmers classified as middle-of-the-road made one response in support of the free-market mechanism and another in opposition to it. This faction constitutes a quite small percentage of the total number, and the greater portion of leading farmers has been classified as anti-free-market, as Table 17 shows.

As would be expected, "anti-free-market" farmers are dominant. However, farmers classified as pro-free-market account for 21.1% of all leading farmers, and this figure is considered to be quite high. Furthermore, in some farm sectors, notably in the horticulture and the small- and medium-livestock breading sectors, the proportion of "pro-free-market" is relatively high.

4. Attitude toward the System of Subsidies

As is well-known, a web of agricultural subsidies is extended to both farm management

TABLE 17. ATTITUDE TOWARD PRICE POLICIES ACCORDING TO PRIMARY PRODUCT

(persons, %)

Primary Product	Attitude toward Price Policies				
	Pro-free-market	Middle-of-the-road	Anti-free-market	No response	Total
Cereals, Potatoes, Beans (1)	102 (11.4)	66 (7.3)	711 (79.2)	19	898 (100.0)
Industrial Crops, Fruits (2)	583 (24.5)	193 (8.1)	1,515 (63.6)	92	2,383 (100.0)
Horticulture (3)	337 (27.5)	107 (8.7)	734 (59.8)	49	1,227 (100.0)
Large Livestock (4)	115 (12.3)	75 (5.9)	996 (78.9)	36	1,262 (100.0)
Small, Medium Livestock (5)	154 (31.0)	33 (6.6)	286 (57.5)	24	497 (100.0)
Sericulture (6)	15 (12.1)	5 (4.0)	102 (82.3)	2	124 (100.0)
No response	7	2	21	0	30
Total	1,353 (21.1)	481 (7.5)	4,365 (68.0)	222	6,429 (100.0)

Notes: (1) Rice, Wheat, Other Cereals, Potatoes, Beans.
(2) Industrial Crops, Vegitables, Fruits, Other Crops.
(3) Horticulture.
(4) Dairy, Beef Cattles.
(5) Pigs, Chickens, Eggs, Other Livestock.
(6) Sericulture.

and rural communities. In this paper, we do not intend to clarify the attitude of farmers toward the whole system of subsidies, but focus on their attitude toward subsidies for the introduction of machines and farm equipment. The question is:

"There is a system of subsidies in agriculture to assist the introduction of machines and equipment. There are various opinions about this system. Please check the one or two responses among the following which most closely match your opinion:

1) Assistance should be afforded not by subsidies but by long-term finance at lower interest rates.

2) Agriculture is the foundation of a nation and it is necessary for agriculture to be supported by subsidies.

3) Agricultural subsidies are necessary to promote cooperation among farmers and to prevent over-investment.

4) Dependency on subsidies has undesirable effects on farm managements, resulting in the weakening of these managements.

5) It is important to utilize subsidies carefully.

6) It is a matter of concern that national and local governments are intervening farm management by granting subsidies."

As Table 18 shows, respondents to this question accounted for 4,343 farmers, and 42.9% of all respondents were of the opinion that "it is important to utilize subsidies carefully." The percentages of responses stating that "it is necessary for agriculture to be supported by subsidies," and "agricultural subsidies are necessary to promote cooperation among farmers and to prevent over-investment," are 36.8% and 33.7% respectively. On the other hand, the ratio of respondents criticizing agricultural subsidies is relatively small.

If we look at the difference of opinions by scales of sales value, there is some tendency to strengthen criticism against agricultural subsidies as the scale of sales value grows higher. This tendency indicates that successful farmers who are capable of achieving higher sales value are inclined to rid themselves of the weaker sorts of managerial constitution that are deeply dependent on subsidies.

But we must take note of the fact that there is a strong latent tendency to support the maintenance of subsidies, as shown in Table 18. This attitude toward subsidies, along with the attitude toward the price-support policies, constitutes one of the limitations on leading

TABLE 18. ATTITUDE TOWARD SUBSIDIES ACCORDING TO SALES VALUE

(persons, %)

Sales Value (¥10,000)	Attitude toward Subsidies (Multi-response)						Total Number of respondents
	Long-term finance is preferable	Protection is necessary	Necessary to promote cooperation	Undesirable effects on devices	Utilize carefully	Intervention is troublesome	
Under 500	363 (27.9)	490 (37.6)	520 (39.9)	187 (14.4)	586 (45.0)	245 (18.8)	1,303 (100.0)
500– 700	312 (27.5)	390 (34.3)	465 (40.9)	174 (15.3)	528 (46.5)	182 (16.0)	1,136 (100.0)
700–1000	429 (33.5)	411 (32.1)	463 (36.2)	219 (17.1)	571 (44.6)	221 (20.1)	1,279 (100.0)
1000–1500	387 (35.6)	350 (32.2)	412 (37.9)	204 (18.8)	445 (40.9)	179 (16.3)	1,087 (100.0)
Over 1500	582 (39.3)	470 (31.7)	451 (30.5)	341 (23.0)	565 (38.1)	265 (17.9)	1,481 (100.0)
No response	15	24	22	12	24	5	57
Total	2,088 (32.9)	2,135 (33.7)	2,333 (36.8)	1,137 (17.9)	2,719 (42.9)	1,097 (17.3)	6,343 (100.0)

farmers for future managerial development.

5. Management of a Farm as an Enterprise

So long as farm management remains at the stage of family farm management, there leaves little room for discussing the way of farm management in the same way as an enterprise, at least on the theoretical level. However, it may be possible to analyse the diverse facets of farm management analogously to enterprise management, in regard to such matters as production management, financial management, and marketing.

We asked leading farmers the following question:

"There is an opinion that agriculture should be managed in the same manner as a business or industrial enterprise. Which opinion is closest to yours: agriculture must be managed as the same manner as a business or industrial enterprise or agriculture cannot be managed in the same manner as a business or industrial enterprise ?"

Table 19 shows the result of responses to this question. Opinions regarding the adaptation of managerial method of enterprise to farm management are divided nearly equally. But, if we look at the difference of opinions by scale of sales value, we see that the higher the sales value, the higher the tendency to consider farm management to be analogous to the management of a business or industrial enterprise, and *vice versa.*

Table 20 shows the crosstabulation of the result of this question with the result relating to the question of "separation of daily life and farm management." We can see quite a close correlation between the answers to these questions. The larger proportion of the farmers who insist that farm management and daily life are integrated with each other sup-

TABLE 19. ENTERPRISE-WISE MANAGEMENT AND SALES VALUE

(persons, %)

Sales Value (¥10,000)	Enterprise-wise Management			
	Affirmative	Negative	No response	Total
Under 500	440 (33.3)	850 (64.3)	32	1,322 (100.0)
500– 700	429 (37.2)	700 (60.7)	24	1,153 (100.0)
700–1000	533 (41.2)	738 (57.0)	24	1,295 (100.0)
1000–1500	506 (46.1)	573 (52.2)	18	1,097 (100.0)
Over 1500	840 (55.9)	633 (42,1)	30	1,503 (100.0)
No response	31	25	3	59
Total	2,779 (43.2)	3,519 (54.7)	131	6,429 (100.0)

TABLE 20. ENTERPRISE-WISE MANAGEMENT AND SEPARATION OF DAILY LIFE AND MANAGEMENT

(persons, %)

Daily Life and management	Enterprise-wise Management			
	Affirmative	Negative	No response	Total
Integrated	1,150 (27.7)	2,924 (70.4)	81	4,155 (100.0)
Separated	1,611 (72.5)	570 (25.6)	42	2,223 (100.0)
No response	18	25	8	51
Total	2,779 (43.2)	3,519 (54.7)	131	6,429 (100.0)

ports the opinion that "agriculture cannot be managed to be analogous to a business or industrial enterprise," and the greater proportion of the farmers holding the opinion that daily life and management are separate entities thinks that "agriculture must be managed in the same manner as a business enterprise."

Stated simply, farmers possessing traditional mind sets demonstrate a tendency to refuse modernized managerial methods, and those who reject traditional attitudes are already preparing to adapt their methods of management to more rational methods borrowed from the sorts of enterprises.

V. *Concluding Remarks*

This paper presents some new empirical evidence on the managerial attitude of leading farmers in Japan. Main conclusions obtained in this analysis are as follows.

1) The farmers included in the system of "Nōgyōshi" are placed in the top rank of Japanese farmers.

2) This does not mean spontaneously that the managerial attitude of these "leading" farmers is "innovative" and "pioneering" in their farm management.

3) The great majority of the leading farmers is inclined to persist in traditional basic values and is in opposition to the free-market system.

4) There is some tendency toward the adaptation of more rational and market-oriented managerial methods in some farm sectors and age groups.

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