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AGRICULTURAL PROBLEMS OF JAPAN IN THE POSTWAR PERIOD

by Keiichi Takeuchi (*)

Introduction.

About 6,043,000 farm households, accounting for nearly 40 % of Japan's total population, are living on the proceeds of not more than 5,200,000 cho (1). Traversed by north-south mountain ranges, forming as it were a back-bone with numerous lateral branches, Japan is predominantly mountainous and hilly, affording only 16 % of the total land area for cultivations as noted in 1958 (2). Japan has to cope with a large percentage of agricultural population, which is uncommon in highly industrialized countries like Japan, and with a limited area of agricultural land. This has characterized her agricultural structure which is, in many cases, considered to have a close connection with her so called population problem. In fact, the scale of farming per farm household is extremely small, with only slightly more than 0.8 hectares under cultivation. Sixty six percent of the total farm households work on less than 1 hectare, while only 0.5 % cultivates more than 10 hectares. The small scale farming mostly carried on by unpaid family labor is yet unable to secure a sufficient income for a living. Consequently a great many of these small households have to supplement their income by engaging in non-agricultural occupations. After the war the number of such part-time farm households increased to 3,090,000 or 50 % of the total by 1950, while by 1955 it reached 3,940,000, or more than 65 % of the total households (see Table 1 & 2). There is little doubt that there is not much possibility of finding any more land for cultivation in this country where mountainous areas cover the bulk of the whole territory, but it is not correct to say that all these effects have an unavoidable result, predestined by physical conditions (3). We will mention, for preference, the fact

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(1) Ten tan make one cho and one cho equals 2.446 acres or 0.9917 ha.

(2) In Japan, as in all the monsoon countries of Asia, the term « agricultural land » is usually taken as « land under cultivation », for, in these regions land utilization has not been developed for livestock raising.

(3) In regard to the limited area for cultivating land, the fact must also be mentioned that not a few areas suitable for farming or pasturing are left unreclaimed mainly because they are owned by the government or by those who prefer to reserve them as forest lands; a lot of fields are left barren and wasted because flood control works have not been stepped up as they should be; also an increasing acreage of fertile paddy and upland fields have been purchased or appropriated to construct plants, highways, air bases, etc., especially on the fertile plains near prosperous cities. In the past four decades,

that, in Japan, in spite of highly level of industrialization (4), a great percentage of the population has remained in agriculture (5). In striking contrast to the remarkable progress of the manufacturing industry since the Meiji restoration, Japanese agriculture remained backward in its major aspects as no social class could be found which would or could carry out a modernization plan. If one neglects the socio-economic condition of the landownership system organized by the Meiji governments and asserts that modernization is impossible as far as rice cultivation is concerned, one is greatly mistaken. Here we will examine first the economic, political and social factors since the Meiji restoration which have been responsible for the present structure of Japanese agriculture.

Japan was the first of the densely populated countries of agricultural Asia to complete its industrialization. The fundamental character of Japanese modernization which was carried out in these 90 years has exerted much influence upon the formation of its agricultural structure. The problems of Japanese agriculture present very interesting aspects also in comparison with the other Asian countries under industrialization. Moreover, in considering the actual problems one cannot emphasize too greatly the importance of land reform (1947-1949), which has caused a remarkable change in major aspects of agriculture, especially in the land ownership system, which is still in the course of transformation. As a result of land reform, the tenanted land areas owned by resident landowners decreased to 500,000 hectares or only 10 % of the total cultivated areas by 1950. That owned by non-farmers was almost negligible in amount. The number of landless tenant-farmers, households has diminished considerably from 20 % in 1940 to less than 4 % of the total number of farm households in 1955 (see Table 6 & 7). Land reform, by abolishing the paralysing land system, has vitalized Japanese agriculture in many aspects, and thus resulted, for instance, in the increase of agricultural productivity (Table 8) called this «the magic of ownership» Arthur Young. Speaking in the economic sense, the accumulation of capital was impossible because whatever was earned went as rent to the noncultivating landowners, and then in their turn invested in more profitable non-agricultural activities, instead of, as now, in the amelioration of agriculture.

But land reform has created, on the other hand, a large band of owner-cultivators, extremely owner-minded and politically conservative, deeply attached to the small piece of land which they now own and

about 1,500,000 cho have been newly cultivated, but almost the same average has been diverted for such non-agricultural purpose or destroyed by flood and other disasters. (See K. IZUKA, *World and Japan, Human Geography for Tomorrow* «Sekai to Nippon», Tokyo, 1957, pp. 350-352).

(4) Several changes due to the industrialization have been similar to those in western countries, such as the rapid increase of population, progress of urbanization. (Tables 3 & 4).

(5) It is duly pointed out by Colin Clark that the proportion of agricultural population in western countries were 66-70 % before industrialization and 22-25 % after it, but in Japan 85 % before and 50 % afterwards. (Table 5).

manage themselves. But their land is not big enough for most of them to make end meet in the farming business. In the present state of things it seems that discussion about agricultural policy hinges on the problem of these small managements which obstruct the mechanization and rationalization of agriculture. We analyse in this paper, after some consideration about the effects of the land reform, the problems of small-holding production which could be the nucleus of the question and the future prospects of Japanese agriculture.

TABLE 1
NUMBER OF FARM HOUSEHOLDS
CLASSIFIED BY FULL-TIME AND PART-TIME
 (unit: 1,000 households)

	Grand Total	Full-time	Part-time		
			Total	Mainly farming	Mainly non-farming
1938 . . .	5,441 (100 %)	2,484 (45.3 %)	2,957 (54.3 %)	1,655 (30.4 %)	1,302 (23.9 %)
1950 . . .	6,176 (100 %)	3,086 (50.0 %)	3,090 (50.0 %)	1,758 (28.4 %)	1,337 (21.6 %)
1955 . . .	6,043 (100 %)	2,105 (34.8 %)	3,938 (65.2 %)	2,275 (37.6 %)	1,663 (27.5 %)

Source: The Ministry of Agriculture and Forestry.

Economic dualism of modern Japan.

Japan today is one of the most highly industrialized countries in the world. The measures which the leaders of the Meiji restoration applied with the slogans of «wealth and armament of the country» (fukoku-kyōhei) and «industrialization and increase of production» (shokusan-kōkoku), had a success that was uncommon for an Afro-Asian country. Moreover as became apparent in reference to the problem of the industrialisation of underdeveloped countries, this exceptional success was brought about without any kind of the financial aid from foreign countries (6). As for the capital which is the first consideration for the industrialisation or modernisation of a country, Japan in the 19th century was not able to resort to the exploitation

(6) Because of the new situation that has arisen after the second world war the economic development of backward countries is needed by advanced countries, not only for political reasons, but also for economic reasons,

TABLE 2
CASH INCOME AND EXPENDITURE
OF AVERAGE FARM HOUSEHOLD IN 1956
(per household of 6.2 persons)

	(Unit: yen)
Agricultural income	155,258
Agricultural receipt	243,439
Agricultural expenditure	88,181
Non-agricultural income	99,010
Non-agricultural receipt	107,712
Non-agricultural expenditure	8,702
Farmhousehold income	254,268
Taxes and other public imposts	31,380
Living expenditure	185,556
Receipts such as gifts, subsidy, etc.	17,718
Balance	55,050

Note: One American dollar equals 360 Japanese yen.

Source: « Farm Household Economy Survey » by the Ministry of Agriculture and Forestry.

TABLE 3
INCREASE OF POPULATION

	Populations in million	Density per sq. Km.
1872]	33.11	89
1898	43.76	118
1920	55.96	151
1940	71.81	194
1955	89.27	242

TABLE 4
PROGRESS OF URBANIZATION (1878-1950)

	Number of cities and towns	Urban population in millions	Percentage to the total population
1878	99	3.43	9.8 %
1898	166	6.96	15.8
1920	232	14.15	26.1
1935	243	24.03	36.1
1950	418	31.20	37.5

Remarks:

- 1) Excluding Hokkaido and Okinawa Prefecture.
- 2) Cities and towns of 10,000 or more inhabitants for 1898 and 1920, but 20,000 or more for 1935 and 1950.

TABLE 5
SHIFTS OF OCCUPATION
(Unit: 1,000)

	Agriculture	Commerce	Manufacture	Total workers
1872 . . .	14,787 (78 %)	1,329 (7 %)	719 (4 %)	19,179 (100 %)
1920 . . .	14,128 (53 %)	3,188 (12 %)	5,300 (20 %)	26,624 (100 %)
1950 . . .	16,132 (45 %)	3,835 (11 %)	5,646 (16 %)	35,575 (100 %)
1955 . . .	16,101 (41 %)	5,912 (15 %)	14,452 (37 %)	39,105 (100 %)

Remark: Occupational classification of each census are not exactly comparable.

TABLE 6
NUMBER OF FARM HOUSEHOLDS CLASSIFIED BY TENANCY
AND LANDOWNERSHIP
(Unit: 1,000)

Classification of Farm households	Before Land Reform (1944)	After Land Reform (1950)
Total	5,537 (100 %)	6,174 (100 %)
Owner-cultivators	1,729 (31.2 %)	3,822 (61.9 %)
Owner-tenants	1,114 (19.2 %)	1,592 (25.8 %)
Tenants-Owners	1,102 (19.9 %)	411 (6.6 %)
Tenants	1,574 (28.4 %)	312 (5.1 %)
Others	18 (0.3 %)	41 (0.6 %)

Remarks: Owner-cultivators mean those farmers who cultivate their own lands; owner-tenants, those who cultivate more owned than leased lands; and tenants-owners, those who cultivate more leased than owned lands.

Source: The Ministry of Agriculture and Forestry.

TABLE 7
LANDS CULTIVATED BY OWNERS AND TENANTS

	Total Area (1,000 cho)	Cultivated by Owners (In %)	Lased by Tenants (In %)
1945	5,288	53.7	46.3
1949	4,958	86.9	13.1

Remarks: Owners in this table include owner-cultivators, owner-tenants and tenant-owners; and tenants cover owner-tenants, tenant-owners and tenants.

Source: The Ministry of Agriculture and Forestry.

TABLE 8
RISE PRODUCTION IN JAPAN

	Planted Area (1,000 ha.)	Production (1,000 t.)	Yield per tan (kg.)
1879	2,537	4,753	187
1897	2,787	4,965	178
1911	3,003	8,277	264
1926	3,158	8,338	264
1935	3,204	8,619	269
1945	2,892	5,872	203
1948	2,884	8,798	305
1950	3,036	9,651	318
1954	3,266	11,463	351
1957	3,239	11,464	354

methods of other nations, as England did in the process of its original accumulation of capital by sacrificing India, but, on the contrary, was on the point of falling into a colonial situation itself. As a result, the Meiji governments had to look for a source of revenue either in a high rate of land-tax policy, which they inherited from the Shogunate and the feudal lords, or in their favourite policy of financial inflation. Those who had a large sum of capital were a small number of privileged, merchants and usurers, but in order to mobilise such capital for industrialisation it was necessary to resort to an elaborate protectionism of national industry; and this in fact was done thoroughly and completely. Yukichi Fukuzawa, the philosopher of enlightenment of that period, wrote in 1874 the following paragraph, from which we can know at what sacrifices the industrialisation of Japan was accomplished (7): «Pitiful is the farmer in the country, who lives in a hell on earth: cultivating 5 tan of fields by himself, he has to support eight children and can neither eat rice though he cultivates it, nor wear silk though he rears silkworms. The rice which he produces with the sweat of his brow comes to be pillaged by the functionaries that are crueller than the eagle, and after that there remain for him only chaff and bran. The rice thus taken away, after passing through many hands of gambler-merchants, is sent to Tokyo to be sold there.» «On the proceeds of such remittance from hell, in the city they construct buildings in western style, iron bridges, and the steam-ships; there they drive in carriages, have foreign clothes and take to extravagant pleasures». This situation at which Y. Fukuzawa expressed such deep resentment is, however, the origin of the so-called economic «dualism» of modern Japan (8);

(7) YUKICHI FUKUZAWA, *To farmers (No ni tsuguru bun)*, in the review «Minkanzasshi», 1874, Tokyo.

(8) Recently in Japan, the expression «double-decker structure of Japanese economy» (*nihon-keizai no ni-ju-kozo*) has been more commonly used.

thus the rural regions afforded cheap labor powers necessary for industry, and, on the other hand, the domestic market for the industry was limited because of the poverty of the people, which in fact was one of the main causes that drove Japan to aggression.

TABLE 9
CHANGES IN CULTIVATED AREAS
(Unit: 1,000 cho)

	paddy-field	upland field	Total	Rate of increase for a year	
				paddy-field %	total field %
about 1600	1,311	—	—	—	—
about 1690	1,841	—	—	+ 0.38	—
about 1830	2,175	—	—	+ 0.12	—
1879	2,535	1,906	4,441	+ 0.31	—
1905	2,842	2,543	5,384	+ 0.44	+ 0.74
1921	3,053	3,109	6,162	+ 0.45	+ 0.85
1937	3,218	2,881	6,099	+ 0.33	+ 0.06
1952	3,029	2,416	5,445	+ 0.40	+ 0.75

Source: S. SAKAMOTO: *Economic laws in the Japanese Agriculture*, Tokyo University Press, 1956, p. 2.

Certainly, the land-holding system was always preserved in its fundamental aspects after the Meiji restoration, and the development of agricultural production was delayed during all this period except for some remarkable growth in the years from the end of the 19th to the beginning of the 20th century because of technical progress, especially the introduction of chemical fertilizers (Tables 8 & 9). This stagnation of agriculture is remarkable in contrast with the rapid development of industry. But it must also be mentioned that a large number of tenant-farmers in the 20's of the current century stood up and organized themselves against the landowners, calling for the reduction of rents and the established rights of cultivation. The magnitude of such disputes clearly showed that Japan was no longer a paradise for non-cultivating landowners, and that land reform would be inevitable sooner or later. Following the years of economic depression in the 30's came a period of wartime economy. The urgent need to secure food production strengthened at any rate the position of those who were directly cultivating the land. And even for the government backed up by capitalist and landowners, it became more essential to protect the interests of tenant-cultivators than those of the idle landowners. The

war ended leaving Japan in a terrible state of destruction and desolation. Numerous factory workers and ex-soldiers were left jobless and hungry. Nothing was more urgent than the boosting of food production. Hence the need for introducing, somehow or other, a drastic reform in landownership.

Operation of land reform over a short period.

Shortly after the end of the war, in 1946, the Japanese government decided to carry out the so-called first land reform, among other measures, by liberating the leased land exceeding 5 cho per landowner for tenant-cultivators and by ordering the payment of rent in cash, instead of kind (9). This measure has been put into practice since 1946, and the burden of cash rent gradually decreased in proportion to the spiraling up of the post-war financial inflation because the rent was paid at a certain level. In November 1946, a legislative measure for the second land reform was promulgated in accordance with the direction of the Supreme Commander for the Allied Powers, who announced that a more drastic reform would be one of the pre-requisites for the democratization of occupied Japan. Thus the limits within which non-cultivating resident landowners should be allowed to hold tenant land were cut from five to one who on the main islands except Hokkaido (10), and non-cultivating non-resident owners were absolutely forbidden to own any farm land. To transfer leased lands from owners to cultivators, the government pursued the policy of buying it from the former and reselling it to the latter. In March 1947, the government made the first purchase of land from the owners, and the whole reform program was completed in 1950. The purchase price was calculated per parcel of land according to the formula defined by the law. The payment to former owners was made with 3.6 % loan bonds callable in 25 years. New landowners might pay either in full or in part at the time of purchase. The balance, if any, could be paid in annual installment within 30 years at 5.5 % interest. The improved land-ownership and tenancy are protected by the law which puts restriction on free sale of land. No one can buy farm land for renting. Only tenants and owner-cultivators actually engaged in farming may be permitted to purchase land. The amount is, however, limited to the extent such as can be effectively managed with their family laborers.

(9) While rent in cash was common in half of the total tenanted upland fields where cash crops were usually produced, the rent for tenanted paddy fields was paid in rice. The rent in kind was generally as high as 42 % of the harvested rice in 1943. Such a high rate of rent was naturally so heavy a burden on tenant farmers that they could not afford any measures for improving their farm management.

(10) In Hokkaido, where land use is less intensive than in other parts of Japan because of the hostile climatic conditions, the scale of land-holding must be larger.

Thus, as a result of the land reform, most Japanese farmers became owner-cultivators (*jisaku-no*), and big landowners completely disappeared, as was shown in Tables 6 & 7.

It is worth mentioning that such a bold reform was enforced successfully in a very short period, even though it was directed by the General Head-Quarters as an important part of the occupation policy; and that reform never resulted in any visible or temporary decline in farm production. But these facts are not surprising. The catastrophe of the war paved the way for land reform, but as was noted above, the necessity for land reform in order to increase agricultural productivity was already keenly felt under the wartime economy. It is striking that such an anachronistic land system could have ever survived in Japan up to the middle of the 20th century! Here we must mention the fact that the form of agricultural management was almost unchanged after the land reform. The leased lands, whether they were big or small, had always been managed on a minor household scale. The land reform acted the rôle of fixing the existing management system with a small scale of household managements, making small owner-cultivators of former small tenants. Because the cultivators could directly continue to manage the same lands, no disturbance or decrease of agricultural production had occurred in the process of transferring the lands.

From land reform to the current transformation of rural society.

The transformation of management form and the social change in the rural society of Japan were not brought about as rapidly as of agricultural production had occurred in the process of transferring land reform and are thus driven to their maximum. The major farming practice; the increase of agricultural production after land reform was mostly derived from the increase of yield of the principal crops per unit area. Abundant output of labor and heavy application of fertilizers have become possible for a large cohort of owner-cultivators created by land reform and are thus driven to their maximum. The major farm operations such as sowing, rice-transplanting, weeding and harvesting were always done by hand labor, therefore the result of yield per unit labor was always low in Japan in inverse proportion to the high yield per unit area of land (11). Heavy application of fertilizers also account for a high yield of crops in Japan, which is among the biggest consumers of fertilizers per unit area of cultivated land in the world. The average input of fertilizers including self-supplied manures per hectare for cultivated land and orchard, is said to be 109.75 kgs.

(11) In U.S.A., 6 million farmers furnish 120 % of food and farm products to their 160 million people, while in Japan 16 million farmers do only about 80 % of food to her 90 million population. This means the productivity of a Japanese farmer is only one-fifty of that of an American.

of nitrogen, 63.40 kgs. of phosphorus, and 75.07 kgs. of potassium (12). The experts have been trying hard to breed rice plants that are more prolific and can endure even overfertilization. It is, therefore, quite natural that the expenses for fertilizers consisted in 34.5 % of the total cash expenditures of a farm household in 1956. However, heavy application of nitrogen and potassium has caused an uneven balance between organic and inorganic matters in the soil. The increased existence of worn out and low productive areas have been thus brought forth. Against this phenomenon, the inducement of livestock husbandry into farms and the application of stable manure or green manure should have been efficacious, but the owner-cultivators on a small household scale did not have enough capital for the introduction of livestock.

We have to remember that Japanese agriculture has continued to exist under some measure of protectionism since the wartime economy. Although such protectionism was lessening after 1950, the productive level of agriculture rose steadily year by year, regardless of economic recessions in the business cycle, owing to the price supporting system. When the rise in agricultural production is compared with principal capitalistic countries, and taking 1951-1952 as a basis, it should be noticed that agricultural production in Japan has shown a rise of approximately 20 per cent, whereas in other developed countries and even in the undeveloped countries such as India, agricultural production after 1955 has remained stagnant at a level approximately 10 per cent higher than the basic period. But when the content of this country's remarkable increase in agricultural production is examined in detail, one finds that this increase has developed unproportionately. The difference is to be seen either in the disparity in the expansion of productive power between the different regions or in the expansion of productive power according to the difference in the scale of management.

In reference to this tendency of unproportioned development of agricultural production, especially noteworthy is the rapid increase of farm machinery since 1952 (see Table 10). It is very probable that since 1952, owing to farm mechanization, the increase of agricultural production has been realized also in labor productivity. An official

(12) For the comparison, here are some data about the consumption of fertilizers per hectare of arable land by other countries. (unit: kgs., data in 1955-1956)

	N	P ₂ O ₅	K ₂ O
Germany, West	54.36	53.98	97.07
Denmark	32.92	36.04	57.67
Italy	15.54	26.34	3.24
United States	11.99	11.71	10.49

datum of the Economic Planning Agency in the Japanese Government shows the rapid increase of labor productivity in agriculture in these few years as compared with land productivity (see Table 11). There can be no doubt that the land reform has vitalized Japanese agriculture in some aspects, but it is only in the past few years that it has begun a real agricultural revolution in its technical and economic sense. Now the upper-class farmers are deeply interested in investing their surplus income in such fixed capital as power machinery for the purpose of further consolidating the foundation of their relatively large scale management, but it is only the upper-middle class farmers that can live on farming business alone, while on the other hand a large number of lower class farmers and their family members have to seek jobs in non agricultural activities, as was shown in Table 1. Such a tendency may be considered, however, one of the expressions of the occupational shifts of population from agriculture to industry.

It now very often happens that, unlike in prewar years, the so-called «full-time» households do not always enjoy better living than «part-timer» farmers. It is of course regrettable from the standpoint of farm household management that able-bodied members have to work in other fields, and also from the national point of view it is nothing less than a deterioration in land utilization. But from the viewpoint of the individual household budget, it appears to be necessary and far better. This tendency is going to become all the more prevalent in rural communities. As basic factors contributing to this increase in farmers engaging in side jobs, we will cite two. The first factor was the prosperity enjoyed by regional industries which caused an increase in demand for labor and the farmers were able to find jobs by commuting from their homes. The second was that the increase in labor demand not only completely absorbed the new school graduates but also spread among youth of more than 20 years of age. The farmers in the higher age bracket are prone to engage in farming unless chances for jobs appear where they can commute rather easily from their homes. It is hardly imaginable that regional industries want this generation who lacks adaptability for a new job.

It is generally said that workers in rural regions, not independent from their farm households, are less class-conscious than wage-earners in big industrial centers. But it might be none the less undeniable that they are gradually emancipating themselves from the typical owner dash minded character, owing to their daily contact, and to their own personal experience as wage-earners. Thus, the increased part-time farmers on the one hand and the progress of farm mechanization which has changed the character of agricultural labor on the other hand, are bringing the transformation of the rural society which maintains the most anachronistic relations in modern Japan.

The agricultural products price support system has played a big role in stabilizing the economy of the Japanese farmers and it was a necessary system to maintain the income of farmers who tilled small plots of land. But now the conspicuous increase in the red figures in

the Food Control Account of the government as well as the fast accumulating stockpile of farm products have become the biggest problems in the nation's agricultural policy. Moreover, the general tendency in today's world for liberalization of currency and trade is inevitably forcing Japan to reduce the protecting policy of agriculture (13). In this connection, it is expected that the economic power of

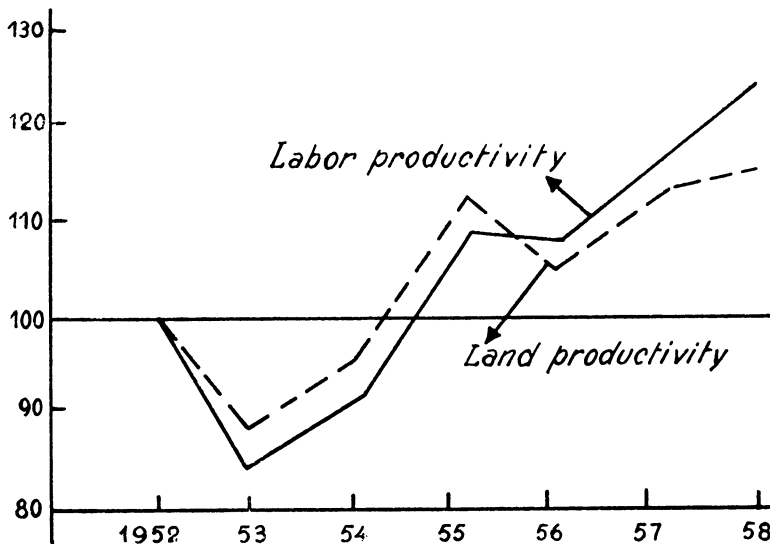
TABLE 10
POPULARIZATION OF MAJOR MOTORED FARMING MACHINERY
(Unit: 1,000)

Year	Motor	Engine	Motored cultivator	Motored sprayer	Motored thresher
1933-35 . .	425 (68.5 %)	88 (23.0 %)	0.2 (1.1 %)	0.5 (2.5 %)	79 (9.1 %)
1951 . . .	620 (100 %)	383 (100 %)	18 (100 %)	20 (100 %)	972 (100 %)
1953 . . .	180 (131 %)	642 (168 %)	35 (194 %)	43 (215 %)	1,209 (130 %)
1954 . . .	849 (137 %)	— —	53 (294 %)	46 (230 %)	— —
1955 . . .	956 (154 %)	1,134 (296 %)	89 (380 %)	76 (380 %)	2,038 (210 %)
1956 . . .	1,025 (165 %)	1,476 (385 %)	141 (783 %)	— —	2,210 (227 %)
1958 . . .	1,034 (167 %)	1,061 (418 %)	227 (1,261 %)	130 (650 %)	2,283 (235 %)
1959 . . .	1,042 (168 %)	1,756 (458 %)	338 (1,877 %)	— —	2,343 (241 %)

Remarks: Figures for 1933-35 are based on «Survey of Farming Implements and Condition of Farming by the Agriculture Bureau, The Ministry of Agriculture and Forestry». Postwar figures are based on «Statistical Table of Agriculture and Forestry». Mark «—» means that no figure was available.

(13) For instance, the support price of wheat in 1958 was 45 % above the C.I.F. price, while that of barley was 36 per cent and soybeans 34 per cent higher. Even at such high price, however, those products were not favorable to the farmers. The daily wages of a member of a farming household growing such products according to the Agriculture-Forestry Ministry's «Survey on the Costs of Agricultural Production» (1959), was 215 yen for barley, 58 yen for rye and 196 yen for wheat. These wages are considerably lower than the 935 yen per day remuneration they received for working in a rice field.

TABLE 11
GROWTH OF AGRICULTURAL PRODUCTION (1952 = 100)



Remarks:

- 1) Labor productivity is obtained by dividing the agricultural production index figures by the number of persons engaged in agriculture.
- 2) Land productivity is obtained by dividing the agricultural production index figures by the total area under crop.

Source: « Economic Survey of Japan » (Keizai-hakusho) (1958-1959), Economic Planning Agency, Japanese Government, 1959, Tokyo.

comparatively large scale management, which is capable of investing with a fixed capital in expanding management and thus increasing productivity enough to abolish supporting price system, should become increasingly stronger. As for the difficulties which small-holding production presents we enter into the particulars in the following paragraph. As for regional varieties, the northern and northeastern parts of Japan (Hokuriku, Tohoku, and Hokkaido), hitherto regarded as backward in many respects, have caught up and are even surpassing, at least in terms of productivity and also in terms of farm mechanization, the formerly advanced regions in the southwestern districts. In the Kinki and Setouchi districts, where commercial crops were grown even in the feudal age and, accordingly, fields have been divided into minor holdings, the introduction of power-cultivators is not at all remarkable. The advanced regions in a certain stage of social development are not always the forerunners for the next stage of development. Table 12 shows the reversing contrast between two typical districts.

TABLE 12
INDICES OF PRODUCTIVITY

	1952		1956		1957	
	Number of days worked per tan (a)	Agricultural income per day's work (b)	(a)	(b)	(a)	(b)
Average of all prefectures	58.6	347	54.0	420	54.0	434
Hokuriku:						
under	64.1	239	50.5	381	55.2	452
3-5 tan	—	—	—	—	49.1	400
5tan-1 cho	58.0	309	51.0	407	49.2	461
1-1.5 cho	49.8	356	44.6	517	42.0	626
1.5-2 cho	40.0	442	38.6	578	40.2	685
over 2 cho	34.9	491	33.4	628	30.3	877
Setouchi						
under 3 tan	105.2	229	77.6	322	83.3	300
3-5 tan	—	—	—	—	70.5	345
5 tan - 1 cho	78.1	302	75.0	336	68.9	376
1-1.5 cho	62.0	373	58.1	422	59.2	427
1.5-2 cho	51.3	374	47.5	513	51.1	499
over 2 cho	44.0	487	44.5	467	49.5	602

Remarks:

1) Based on « Farm Household Economy Survey » by The Ministry of Agriculture and Forestry.

2) In the case of the number of days worked per tan for the years 1952 and 1956, 10 work hours were calculated as 1 day and added to the computed number of work days of the household members, since the hired labor has not been computed.

Small-holding production at turning point.

Table 12 shows also the differences in expansion of productive power classified by scales of management on the basis of the Ministry of Agriculture and Forestry's « Farm Household Economy Survey ». When classified by scale of management, the larger the scale of management is, the higher becomes the reward for labor, and in the case of the Hokuriku area, in particular, even the agricultural income per tan becomes higher. Generally speaking, the intensive small-holding techniques such as increased investment in fertilizers and agricultural chemicals or the diffusion of insulated or electrically heated rice nurseries are becoming more quickly diffused in comparison with the fixed methods of production. At the same time their effect in productive power is revealed more quickly, since the required capital for such

TABLE 13
DECREASE IN EFFICIENCY OF FIXED CAPITAL

	Under 3 tan	3-5	5 tan- 1 cho	1-1.5	1.5-2	Over 2 cho
All prefecture for 1947:						
Efficiency of fixed capital	0.608	0.615	0.639	0.694	0.700	0.739
Income rate (%)	59.2	63.0	64.3	65.7	65.2	64.6
Proportion of depreciation expenses in farm management expenses (%)	17.6	21.3	24.1	24.6	25.0	24.5
Efficiency of fixed capital:						
Hokuriku: 1952	1.014		1.055	0.934	1.088	1.051
1957	0.530	0.510	0.618	0.748	0.861	0.839
Setouchi: 1952	0.732		0.926	0.988	0.815	0.995
1957	0.636	0.458	0.530	0.604	0.561	0.501
	1952	1953	1954	1966	1956	1957
All prefectures:						
Income rate (%)	71.1	67.6	66.4	69.6	71.1	64.8
Efficiency of fixed capital	0.901	0.737	0.670	0.794	0.724	0.679

Remarks:

- 1) Efficiency of fixed capital is agricultural income divided by fixed capital.
- 2) Fixed capital was computed on the basis of the value of buildings (excluding residence), farm implements and animals and plants at the beginning of the year.
- 3) Income rate is agricultural income divided by agricultural profit.

Source: Farm Household Economy Survey, The Ministry of Agriculture and Forestry.

techniques is small and can be retrieved rapidly. It is, however, difficult for such small-holding techniques to raise productive power above the present level once they have been adopted and have come into general use.

According to Table 13, the efficiency of fixed capital has gradually fallen since 1952. In 1957 a fall of approximately 25 per cent is to be found in the average for all prefectures in comparison with the figure for 1952. Furthermore, when one examines the situation in the Hokuriku and in the Setouchi area according to the scale of management, one finds that the efficiency in 1957 is lower than in 1952 for all the agricultural areas and for all types of managements. On the whole, the fall is less in the case of large-scale management. Upon examining with reference to Table 13 the income rate and the proportion of

depreciation costs within agricultural managements, attention should be given to the fact that in small and middle-scale managements even the present level of investment has become quite a heavy burden upon the management. In other words, the past small-holding techniques which until recent years had been responsible for the expansion of productive power had run their course. Stagnant investment in fixed property such as farm implement causes the fall in capital efficiency. By examining the number of transaction in arable land on the basis of the Ministry of Agriculture and Forestry's «Agricultural Land Report», one finds that, in 1959 as against 1955, the number of sales was more than the number of purchases in the case of small-scale management, while conversely the number of purchases was higher than the number of sales in large-scale management. As a result of summarizing the above trends, it may be said that in the large-scale management the possibility of expanding itself exists on account of its actual economic power but in the small-scale management such possibilities hardly exist, and as a result, farmers are abandoning agriculture and taking concurrent jobs.

In the sense mentioned above, Japanese agriculture has now been confronted with the great task of discontinuing the ultrasmall farming system since the Meiji era and of creating a new agricultural structure. Fundamentally, however, the smooth development of large-scale farming cannot be hoped for without improving the various existing systems which have the effect of maintaining the petty household farming. For instance, since the agricultural productivity of small-scale households, especially part-time farmers, is lower than the large-scale households, it may be suggested that these part-time classes should be so oriented as to give up farming as a matter of governmental policy. As matters now stand, however, many petty farmers restrict the movement of land necessary for fostering the large-scale management, resulting in the so-called land shortage. But these part-time farmers are unable to quit farming because of low wages and poor working conditions at other enterprises where they work. Therefore, it is important to get rid of these factors.

Now the Japanese government adopts the platform of speedy removal of part-time farmers and of strengthening large-scale management. But so far many industries count on cheap labor forces from rural areas. The problem of improving the status of part-timers has much to do with or hinges on that of reforming the constitution of Japanese economy; in other words, the problems of small-holding production as well as part-time farmers have their origin in the economic dualism of modern Japan. It must be mentioned, in this reference, that the gross national product in fiscal of 1959 increased by 16 per cent over the previous years while industrial production rose by 29 per cent (14). Such a rapid production increase, which is causing a

(14) The increase rate of national economy in every year is given out by Economic Planning Agency of the Japanese government.

corresponding increase in the demand for labor and thus helping to improve the wage standards and working conditions in the medium and small enterprises which had been lagging behind, may present a basic condition for abolishing the traditional dual structure of Japanese economy. The agricultural policy adopted now, which is after all geared to improve the character of agriculture of Japan and to raise its productivity, is, on the other hand, deeply attached to the ambition of Japanese capitalism which has to continue the high rate of economic growth in the imminent situation of trade liberalization. Hence the actual slogan of «rationalization of agriculture» can and must be claimed at the same time by the socially antagonistic classes, but raises the question of what shall be done with the population who quits farming in the process of agricultural rationalization. We can then see the nature of that agricultural policy (*).

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