Agrarian Reform, Employment and Rural Incomes in Japan

Takeo MISAWA [1]

IT IS NOT AN EASY TASK to evaluate the effect of agrarian reform on employment. Any attempt to do so necessarily gives rise to a number of statistical and other problems since agrarian reform is but one of the factors directly or indirectly affecting agricultural development. Indeed, there are cases in which agrarian reform has had little to do with a particular kind of development or change in agriculture. Even here, however, it is worth while to examine the implications of reform in terms of economic growth in general. It is in the light of these considerations that I propose to deal with land reform and employment in Japan.

The Japanese programme of land reform

The programme of land reform in Japan started in 1945 and was almost completed by 1950, all the measures being taken in the occupation period following the Second World War. The object of the first Land Reform Bill presented by the Government to the Diet in December 1945 was to replace produce (mostly rice) rent by cash rent and to transfer the ownership of arable land in excess of a certain area from the landlords to the tenants. The Bill reflected, in a sense, the constant pre-war efforts of the Government to make the status of tenant-farmers more secure and to establish owner-farmers on a wider scale. However, the first Land Reform Bill was rejected by the General Headquarters of the Allied Powers, and so a second Bill aimed at more thoroughgoing reform was drawn up; this became law in October 1946. While I shall not attempt here to give a detailed account of the Japanese land reform process, a summary of its main characteristics seems desirable for a clearer understanding of the problems discussed below.[2] The objectives of the reform were, first, the

[1] Professor of Agricultural Economics, Tokyo University of Education.

[2] For more detailed information see, for example, R. P. Dore: *Land reform in Japan* (Oxford University Press, 1959).

establishment of owner-farmers through the transfer of ownership of agricultural land from landowners to tenants; secondly, the raising of agricultural productivity through the incentives provided by ownership; and thirdly, the democratisation of rural life, in particular by freeing the farmers from the influence of the landlords.

The principal measure taken under the land reform programme was the purchase of arable land from landlords, and its resale to tenants or qualified cultivators, under conditions stipulated by law and through the direct intervention of the Government. Agricultural Land Committees acted on behalf of the Government. There were three categories of arable land which could be purchased by the Government, namely (1) all land owned by absentee landlords irrespective of the area; (2) all tenant land owned by resident landlords in excess of 1 hectare; and (3) all land cultivated by owner-farmers in excess of 3 hectares. The hectare ceilings for categories (2) and (3) were established on the basis of the average size of the holdings in forty-five mainland prefectures, but in Hokkaido, where farms were traditionally larger, these ceilings were raised to 4 and 12 hectares respectively.

The purchase price of arable land payable by the Government to the landowner was determined, in principle, by capitalising (on the basis of the market rate of interest) the estimated value of the rent component of agricultural incomes, with an upper limit of 760 yen per *tan* [1] of rice field and of 465 yen per *tan* of upland field. In addition a bonus amounting to 220 yen per *tan* of rice field and 130 yen per *tan* of upland field was paid by the Government to the landlord for the first 3 hectares of purchased arable land. The bonus was regarded as corresponding to the difference between the landlord's assessment of the value of his land and the government purchase price. The sale price charged to the new owner-farmer by the Government was exactly the same as the government purchase price.

The purchase and resale prices were fixed for the purposes of the implementation of the land reform programme. However, with the rapid progress of inflation, the value of the amounts paid for land constantly decreased. According to a survey, the average market price of rice land had risen to about 20,000 yen per *tan* in 1950 but the compensation paid to the landlords when the reform took place was less than 1,000 yen per *tan*. This large discrepancy gave rise to many complaints from landlords.

As land reform in Japan was carried out in the immediate post-war period, it was strongly influenced by the policy of the GHQ of the Allied Powers, which held that the traditional system of landlordism had long been an obstacle to the development of Japanese agriculture. As a result of this attitude, the owner-farmer principle was given high priority in the land reform legislation.

[1] Approximately one-tenth of a hectare.

Some statistical data on the results of the land reform programme are given in table I. This shows clearly that a big change occurred in the percentage composition of owner-farmers and tenants between 1947 and 1950, the period in which the land reform programme proceeded most vigorously. Whereas tenant-farmers, including part-tenants-part-owners, constituted 43.5 per cent of all farmers in 1947, this proportion declined sharply to 11.8 per cent in 1950. It should be noted that the percentage of tenants was already decreasing in the pre-reform period as a result of government policy in favour of owner-farmers. Moreover, the number of tenant-farmers continued to decrease even after the land reform programme had been completed, partly because of the adoption of the Agricultural Land Act, which strictly controlled movements tending to undermine the reform, and partly because of the declining profitability of leasing agricultural land.

TABLE I. PERCENTAGE COMPOSITION OF OWNER-FARMERS AND TENANTS OF ARABLE LAND, SELECTED YEARS

Year	Total	Owner-farmers [1]	Part-owners-part-tenants [1]	Part-tenants-part-owners [1]	Tenants [1]	Others [1]
1938 . . .	100	29.3	44.6		26.1	—
1941 . . .	100	30.6	20.7	20.2	28.0	0.4
1947 . . .	100	36.4	20.0	16.9	26.6	0.2
1950 . . .	100	61.9	25.8	6.7	5.1	0.7
1955 . . .	100	69.5	21.7	4.7	4.0	0.2
1960 . . .	100	75.2	18.0	3.6	2.9	0.3
1965 . . .	100	80.1	15.1	2.8	1.8	0.2

Source: Ministry of Agriculture and Forestry: Agricultural statistics.

[1] Farmers are classified according to whether they are owner-farmers (owning more than 90 per cent of the land they cultivate); part-owners-part-tenants (owning 50 to 90 per cent); part-tenants-part-owners (owning 10 to 50 per cent); or tenants (owning less than 10 per cent). " Others " are farmers who do not cultivate land.

Further information on the percentage of owner-cultivated and tenant-cultivated arable land is given in table II.

TABLE II. PERCENTAGE DISTRIBUTION OF AREA OF ARABLE LAND BY TYPE OF HOLDING, SELECTED YEARS

Year	Owner-cultivated	Tenant-cultivated
1941	53.8	46.2
1947	60.5	39.5
1955	91.0	9.0
1960	93.3	6.7

Source: Ministry of Agriculture and Forestry, op. cit.

The general establishment of owner-farmers helped to resolve simultaneously the problem of redistribution of agricultural land and that of redistribution of incomes in agriculture.

As regards the former problem, certain characteristic features of the concentration of land ownership in Japan before land reform should be noted. Absentee landlords owned 17 per cent of all the arable land in 1945. However, the number of landlords, including resident farmers, owning more than 50 hectares was relatively small. A survey reported that they numbered about 3,000 in 1924. They included bankers, moneylenders, brewers, company directors and a few corporations. More surprising is the fact that 22 per cent of all farmers leased arable land for tenancy, and the area leased was, on the average, as little as 0.9 hectares per farm household in 1947, i.e. at the beginning of the land reform programme. [1] Thus a widespread system of very small tenant-farmed holdings existed side by side with a relatively limited system of large-scale land ownership.

Whatever the type of land ownership, however, there can be no doubt about the effects of the transfer of ownership on agricultural production—a matter which will be dealt with in a subsequent section.

As regards the redistribution of incomes in agriculture, the land reform programme succeeded in removing the heavy burden of rent payments by transforming most tenants into owner-farmers. In 1945 the rental paid for each 0.1 hectare of rice-field was, on the average, one out of every two *koku* [2] of the rice yield, i.e. 50 per cent of the gross product. Such a high rent was obviously an obstacle to productive investment on the part of the tenant. With the change in the tenant's status, the rent component of agricultural incomes was placed at the cultivator's disposal.

Simultaneously with the transfer of ownership of land, the payment of produce rent was strictly prohibited and the land reform legislation provided for control of cash rents. It is estimated that, since the enactment of the Agricultural Land Act, rent has come to account for less than 1 per cent of agricultural incomes, whereas previously it represented 25 per cent. Moreover, the rent to be paid for agricultural land was fixed by law without regard for its economic value. Consequently, the rent paid by tenant-farmers ceased to have any economic significance, particularly in view of the violent inflation following land reform. This was obviously bound to make tenancy unprofitable from the landowners' point of view and no doubt accounts for the marked decrease in the proportion of tenants after land reform shown in table I and the accompanying decline in the acreage under tenancy shown in table II.

[1] For statistics on landlords in Japan prior to the land reform period see Nobufumi Kayô (ed.): *Nihon Nôgyô Kiso Tôkei* [Basic statistics of Japanese agriculture] (Tokyo, 1958), pp. 104-106.

[2] In Japan rice is usually measured by the quantity of brown rice, and a *koku* (4.9629 bushels) is the capacity unit. One *koku* of brown rice weighs 150 kg.

This is not the whole story of land reform in Japan, however, and readers are referred to table III for information on another aspect. A comparison of the figures for 1950 with those for 1947 shows that the percentage composition of the number of farms by size changed very little during this period, which means that land reform scarcely affected the size of farms and, accordingly, their percentage distribution by size. The legislature confined itself to setting an upper limit on the size of holdings. However, it will be noted from the table that there was an appreciable change in the percentage composition of farms of under 0.5 hectares between 1941, during the Second World War, and the land reform period, and this should perhaps be explained. The remarkable increase that took place during this period was mainly due to the influx into agriculture at the end of the war of a great number of people without employment, a phenomenon which is further discussed in the following section. It may also, however, have been partly due to the fact that farmers were anxious to ensure the continued ownership of their land in anticipation of increasing difficulty in doing so once the land reform measures were strictly applied. Many farmers and landlords endeavoured to hold on to land in excess of the maximum permitted area by dividing the farm household into separate units, or by transferring the ownership of a parcel of land to returned family members and relatives, before the land reform legislation came into force. Whether or not such endeavours were successful depended upon the decisions of the Agricultural Land Committees, and, where they were, they contributed to the increase in the proportion of small farms.

The number of farms of under 0.5 hectares began to decrease immediately after the land reform period and continued to do so until quite recently as a result of the outflow from agriculture of farmers operating uneconomic units. The implication would seem to be that some of the people who tried to set themselves up as small farmers in the immediate post-war and the early reform years were unsuccessful and showed relatively high mobility in response to the demand for labour in the non-agricultural sectors of the economy.

While it may seem strange that land reform hardly affected the size of farms, the explanation lies in the fact that farmers already cultivating land were given priority in obtaining the ownership of it.

Thus, despite the reform, 70 per cent of farmers were left as small-scale operators cultivating less than 1 hectare. The proportion of farmers cultivating over 2 hectares has been under 5 per cent until recent years.

The prevalence of small-scale farming has given rise to important problems related to an increase in part-time farming during the period of economic growth in the 1950s and 1960s. These will be discussed in a subsequent section.

A few remarks should be added about the way land reform was actually implemented, particularly as regards the exceptions that were

TABLE III. PERCENTAGE DISTRIBUTION OF FARMS BY SIZE OF HOLDING OF ARABLE LAND, SELECTED YEARS

Year	Total	Under 0.5 ha.	0.5-1.0 ha.	1.0-1.5 ha.	1.5-2.0 ha.	2.0-2.5 ha.	2.5-3.0 ha.	Over 3.0 ha.	Others[1]
1938	100	34.4	30.6	27.9		5.6		1.5	—
1941	100	33.5	30.8	27.7		6.0		1.6	0.4
1947	100	42.4	31.8	16.0	6.1	3.2		0.5	0.0
1950	100	41.5	32.9	15.9	6.1	3.0		0.4	0.1
1955	100	39.1	33.7	16.9	6.5	2.3	0.8	0.5	0.2
1960	100	38.7	32.8	17.2	6.9	2.5	0.9	0.6	0.3
1965	100	38.1	32.2	17.3	7.4	2.9	1.1	0.8	0.2
1970	100	38.4	31.0	16.8	7.8	3.3	1.4	1.2	0.2

Source: Ministry of Agriculture and Forestry, op. cit. Hokkaido is not included.

[1] Farms on which the land is not cultivated.

made. Thus farmers cultivating over 3 hectares (in the mainland prefectures) were allowed to continue to do so if the family labour force was sufficient for this purpose or if division of the land would have been prejudicial to the productivity of the farms.

Another exception was forest land, which was placed completely outside the scope of land reform. This decision had various repercussions on agricultural activities. In fact forest land is used for two purposes: either to support agricultural activities, or strictly for purposes of forestry. As there are no adequate statistics relating to forest land in the land reform period, reference is made here to the 1970 Census of Agriculture and Forestry which showed that 2,017,000 farm households, or 88.5 per cent of all farm households holding forest land, held between 0.1 and 5.0 hectares of such land. For most of them, as well as those owning less than 0.1 hectares, this land is an important source of grass for manure and fodder and of brushwood for fuel. In some regions farmers have common rights as regards collecting grass and brushwood from publicly owned forest land. Generally speaking, the exclusion of such land from the land reform measures favoured the larger farmers. On the other hand, forest land is a stronghold of forester landlords. The 1970 census showed that there were some 30,000 non-farm foresters holding more than 5 hectares. It was possible for such landlords to survive the effects of land reform even when they had lost most of their arable land. The land reform programme was harshly criticised by progressives in subsequent years as not having been sufficiently thoroughgoing because it did not affect forest land.

The case of reclaimed land is also interesting. Some of the land reclaimed immediately after the war had been arable land before the war

and had been commandeered by the Government for use as army bases or munition industry sites. After the war such land was partly returned to the previous cultivators and partly used as a reservoir for the implementation of the land reform programme. It was also cultivated by unemployed immigrants to the rural areas from devastated towns and lost territories.

These are, of course, fringe problems, but they may nevertheless have affected to some extent the employment situation in agriculture.

Employment in agriculture

What was the effect of land reform on employment in agriculture? Unfortunately, it is not possible to give a precise answer to this question since adequate statistics for the period are lacking. However, some information can be obtained from a combination of various statistics, even though they were not necessarily compiled by the same method and using identical definitions. According to the 1946 Census of Agriculture, the total economically active agricultural population in that year was 16,321,000, or considerably more than the corresponding figure of 14 million in pre-war Japan. Such a remarkable increase in the number of people engaged in agriculture is chiefly explained by the reverse flow of population to rural villages caused by urban unemployment, evacuations, repatriation and demobilisation.

While the basic objective of the land reform programme was to change the agricultural structure, the policy makers had to bear in mind the need to find employment for this influx of would-be farmers to the countryside, and the programme had, accordingly, to concern itself with employment questions. This may be the reason why no attempt was made to change the size of holdings. If farms had been amalgamated to create larger holdings, the employment problem would have been accentuated, because larger holdings would necessarily have led to a smaller economically active agricultural population in relation to the total area of arable land. Consequently an important aspect of land reform, i.e. reallocation of land resources, was bypassed.

The average annual rate of change in the agricultural population can be deduced from the statistics for 1946, 1953 and 1960, and the results are shown in table IV. From 1946 to 1953 there was an average annual decrease of 0.4 per cent in the total number of persons engaged in agriculture (a 0.8 per cent increase in the number of males and a 1.5 per cent decrease in the number of females). Thus there was little change in the agricultural population, either as a whole or by sex, during the land reform period. In the period from 1953 to 1960 a different pattern emerged, with an average annual rate of decrease in the number of males of 3.7 per cent.

TABLE IV. CHANGES IN ECONOMICALLY ACTIVE AGRICULTURAL POPULATION, 1946, 1953 AND 1960

Agricultural population	Number ('000)			Average annual rate of change (%)	
	1946	1953	1960	1946-53	1953-60
Male	7 403	7 810	5 995	+0.8	−3.7
Female	8 918	8 050	8 546	−1.5	+0.9
Total . . .	16 321	15 860	14 541	−0.4	−1.2

Source: Ministry of Agriculture and Forestry, op. cit.

In fact, land reform played a role in providing the increased agricultural population with employment opportunities before industry recovered from the destruction of the war.

The whole picture alters on extension of the period of observation to the 1960s, or, in view of the availability of comparable statistical data for the years in question, to the period 1956-68 (see table V).

TABLE V. CHANGES IN ECONOMICALLY ACTIVE AGRICULTURAL POPULATION, 1956, 1962 AND 1968

Agricultural population	Number ('000)			Average annual rate of change (%)	
	1956	1962	1968	1956-62	1962-68
All workers	**15 681**	**12 031**	**10 028**	**−4.3**	**−3.0**
Male	**7 548**	**5 792**	**4 657**	**−4.3**	**−3.6**
Female	**8 133**	**6 239**	**5 371**	**−4.3**	**−2.5**
Self-employed	5 655	5 031	4 278	−1.9	−2.7
Male	4 602	3 960	3 372	−2.5	−2.6
Female	1 053	1 071	906	+0.3	−2.8
Unpaid family workers . . .	9 536	6 739	5 602	−5.6	−3.0
Male	2 664	1 717	1 204	−7.1	−5.7
Female	6 872	5 022	4 398	−5.1	−2.2
Employees	489	191	148	−14.5	−4.2
Male	281	86	81	−17.9	−1.0
Female	208	105	67	−10.8	−7.2

Source: Office of the Prime Minister, Bureau of Statistics: Employment status survey.

First it may be noted that, during the six years from 1956 to 1962, not only did the total number of workers economically active in agriculture become smaller (in 1960) than the pre-war minimum but the average annual rate of decrease was 4.3 per cent—a rate never before experienced in Japan. This rate was almost identical for both sexes. The changes among sub-groups are also interesting. The average annual rate of decrease was 1.9 per cent for self-employed workers, 5.6 per cent for unpaid family workers, and 14.5 per cent for employees. Among self-employed workers, the number of female farmers actually increased annually by 0.3 per cent. This was the only group which registered an increase during the period under review, the implication being that some male farmers, on abandoning farming, were replaced by their female relatives.

The changes in the numbers of persons engaged in agriculture during the period between 1962 and 1968 are also significant, as they represent the latest trends. The total number of workers showed an average annual rate of decrease of 3.0 per cent. Thus on the whole there was some reduction in the rate of decrease during this period. However, some differences may be noted among sub-groups and between sexes when comparisons are made with the changes in the preceding six years. The slightly decreasing trend among self-employed workers somewhat accelerated, while the rate of decrease among unpaid family workers decelerated, probably because a minimum family labour force is needed to maintain a farm unit. The rate of decrease of employees also slowed down, the reason being that there are a very small number of employees in Japanese agriculture and those who were in a position to emigrate easily from agriculture had already moved to other industries in earlier years.

As regards the land/man ratio in the post-war period, while it is very small compared with that in other countries [1], there has been a considerable change since the beginning of the 1960s. The amount of arable land per person economically active in agriculture probably increased more during the last decade than during the whole period 1900-45 and is a reflection of the major changes which have occurred in Japanese agriculture in recent years. It will, however, take another decade or two for the land/man ratio in Japan to exceed 1 hectare.

Productivity of labour in agriculture

The average annual rate of growth of labour productivity in agriculture after the introduction of land reform is estimated to have been 4.6 per cent for the three years from 1962 to 1965, 7.3 per cent for the three years from 1965 to 1968 and 5.9 per cent for the six years from 1962 to 1968.

[1] See Zubeida M. Ahmad and Marvin J. Sternberg: " Agrarian reform and employment, with special reference to Asia ", in *International Labour Review*, Vol. 99, No. 2, Feb. 1969, table II, p. 163.

For the purposes of this estimate the value added in agriculture in each year is deflated by 1965 agricultural product prices and a three-year moving average is used. When a five-year moving average is used, the average annual rate of growth of labour productivity in agriculture is found to have been 5.1 per cent for the three years from 1962 to 1965. While, for the purpose of eliminating the effects of yearly fluctuations in agricultural production, it might be more satisfactory to use a seven-year moving average, lack of statistics prevents this.

It may seem surprising that the average annual rate of growth in labour productivity in agriculture was as much as 5 per cent until recent years. This high growth rate is in fact one of the characteristic features of Japanese agriculture in the post-reform period. In this connection reference may be made to Kazushi Ohkawa's inquiries into the long-term development of Japanese agriculture.[1] According to Professor Ohkawa, the development of agriculture in Japan since 1868 can be divided into three phases—1868-1919, 1919-54 and 1954 onwards—on the basis of characteristic features of input and output performance, including labour productivity. The average annual rate of growth of labour productivity in agriculture was steady in phase I at 1.7 per cent; it slowed down and even turned negative at −0.1 per cent in phase II; and it began to spurt ahead again from the beginning of phase III. Ohkawa estimated on the basis of the latest statistics available at the time he wrote his article that the average annual rate of growth in agricultural labour productivity was 5.2 per cent during the period 1954-61. Thus, it was notably higher in phase III than in phases I and II.

The estimates given at the beginning of this section may not be linked with Professor Ohkawa's estimates because they were made on the basis of different methodology and data. However, it seems clear that a high annual growth rate of agricultural labour productivity has been maintained until recent years. This growth rate, which was never experienced in pre-war years and yet was sustained for nearly twenty years from the beginning of the 1950s, may in all probability be attributed to the effects of land reform in the immediate post-war period.

The effects of land reform on the productivity of land were also considerable, and in this connection reference may again be made to Professor Ohkawa's inquiries into the long-term development of Japanese agriculture.[2] According to his analysis, the average annual rate of growth of the productivity of land in agriculture was about 1.3 per cent in phase I, 0.7 per cent in phase II and 4.0 per cent in phase III. The rate of increase was thus remarkable after land reform.

[1] Kazushi Ohkawa: "Phases of agricultural development and economic growth", in Kazushi Ohkawa, Bruce F. Johnston and Hiromitsu Kaneda (eds.): *Agriculture and economic growth: Japan's experience* (Tokyo, Princeton University Press and University of Tokyo Press, 1969).

[2] Ohkawa, op. cit.

The improvement of agricultural productivity was regarded as being among the most essential objectives of land reform and it was to this end that the transfer of the ownership of land from landlords to tenants was energetically carried out. The incentive thereby given to the new owner-farmers to devote their full capability to farming brought about the remarkable increase in agricultural productivity.

There was vigorous capital investment in agriculture by farmers after land reform, as can be seen from table VI. Broadly speaking, this capital investment developed along two different lines.

On the one hand it was directed towards increases in capital stocks of livestock (especially cows, pigs and poultry) and plants (mainly various kinds of fruit trees) and was related to the diversification of agricultural production needed to meet the increased demand for quality food and the change in the dietary pattern indicative of the higher standard of living of the nation in the years of post-war economic development. The increase in this type of investment seems to have started immediately after land reform, as table VI shows.

TABLE VI. INDICES OF CAPITAL STOCK [1] AND PERSONS ECONOMICALLY ACTIVE IN AGRICULTURE

(1946 = 100)

Year	Livestock	Plants	Machinery and implements	Non-residential buildings	Total capital stock	Persons economically active in agriculture
1946	100	100	100	100	100	100
1953	150	122	127	116	122	97
1956	173	151	152	124	136	96
1959	195	184	206	133	160	89
1962	278	263	361	169	230	74

Sources: *Capital stock:* K. Ohkawa *et al.*: *Shihon Sutokku* [Capital stock], Vol. III of K. Ohkawa, M. Shinohara and M. Umemura (eds.): *Chôki Keizai Tôkei* [Estimates of long-term economic statistics of Japan since 1868] (Tokyo, Tôyô Keizai Shimpôsha, 1966). *Persons economically active*: Ministry of Agriculture and Forestry, op. cit.; and Office of the Prime Minister, Bureau of Statistics, op. cit.

[1] 1934-36 prices.

On the other hand there was active investment in agricultural machinery and implements. The figures in table VI show that the mechanisation of agriculture which developed at the beginning of the 1950s had become even more intensive by the early 1960s.

Technological developments have likewise been conducive to the increase in agricultural productivity in the post-war period, and due regard should be paid to the part played by such current inputs as

fertilisers, insecticides, pesticides, herbicides and various other kinds of agricultural materials, whose combined effect has been really important in this respect.

Technological advances are also important in view of the need to effect economies as regards the labour of farm family members—a need which is already considerable and is likely to increase. There are many reasons for economising labour inputs in agriculture, including, first of all, the rise in the value of labour due to the increase in agricultural wage rates—which also affects unpaid family labour. Secondly, probably as an indirect result of urbanisation, there is an increased appreciation of leisure not only among workers in the non-agricultural sectors of the economy but also among farm workers. A third important reason for economising family labour in agriculture is to increase earnings from off-farm employment. This is associated with the problem of part-time farming which will be discussed in the next section.

In 1962 labour productivity in agriculture was 30.1 per cent of that in manufacturing. It rose to 34.9 per cent in 1965 but, though continuing to improve slightly, the proportion was still only 35.1 per cent in 1968. It should be borne in mind, moreover, that this improvement reflects the effects of changes in prices in the two sectors. Prices of agricultural products rose in relation to those of manufactured products during the period from 1962 to 1968, and this was probably due, to some extent, to the relatively low growth rate of productivity in agriculture, which even at an annual average of 5 per cent was still low compared with the rate in manufacturing. The discrepancy is mainly the result of the fact that there is limited scope for agriculture to take advantage of economies of scale. In other words agriculture in Japan is handicapped by the small size of holdings, which land reform failed to alter.

Part-time farming and employment

Part-time farming now constitutes a really difficult problem which still has to be solved, a fact that is not unconnected with the land reform programme.

While the programme was successful in achieving one of its main objectives, i.e. introducing the system of owner-farmers, and the results have been highly appreciated at home and abroad, it failed, for reasons mentioned earlier connected with the immediate post-war employment situation, to deal with the problem of small-scale farming, and had very little effect on the size of holdings. Thus, despite the unprecedentedly high average annual growth rate of labour productivity in agriculture in the years following land reform, farm incomes have been lagging considerably behind non-farm incomes on account of the fact that small-scale farming presents an obvious obstacle to any further increase in the

productivity rate, and most farm households seem to be unable to obtain sufficient income from farming to maintain an acceptable standard of living. The outcome has been a very considerable increase in part-time farming.

Table VII shows the number of farms in selected years in Japan, with special reference to part-time farms. During the fifteen years from 1955 to 1970 the total number of farms decreased by 12 per cent; full-time farms decreased by as much as 60 per cent; while part-time farms increased by 15 per cent. In 1970, 84.4 per cent of all farms in Japan were

TABLE VII. NUMBER OF FARMS IN SELECTED YEARS

(In thousands)

Type of farm	Year			
	1955	1960	1965	1970
All farms	**6 043**	**6 057**	**5 665**	**5 342**
All full-time farms	2 106	2 078	1 219	832
All part-time farms	3 937	3 978	4 446	4 510
Category I [1]	2 274	2 036	2 081	1 802
Category II [2]	1 663	1 942	2 365	2 709
Part-time farms earning off-farm regular wage incomes	1 552	1 831	2 099	2 202
Category I [1]	804	875	841	726
Category II [2]	748	956	1 258	1 476

Source: Ministry of Agriculture and Forestry: Census of Agriculture.

Note: Full-time and part-time farms are defined on a farm household basis and not on a farm operator basis. If any member of the family in a farm household is engaged in off-farm employment, even though his employment is completely non-agricultural, the farm is regarded as operating on a part-time basis.

[1] Part-time farms where the net farm income is more than the total off-farm income of the farm household. [2] Part-time farms where the net farm income is less than the total off-farm income of the farm household.

being operated on a part-time basis. During the fifteen years from 1955 to 1970 the number of category II part-time farms [1] increased by as much as 63 per cent, while the number of category I part-time farms [1] decreased by 21 per cent, the implication being that farm households in Japan started to rely to a greater extent on off-farm incomes in the years following land reform. As can also be seen from table VII, a growing number of farm households are being supported by wages or salaries earned in non-agricultural occupations. According to the 1970 Census of

[1] As defined in table VII.

Agriculture the total number of persons belonging to farm households who were gainfully employed in farm and off-farm occupations was 17,011,000 in that year. Of these, 5,214,000 (30.6 per cent) were mainly engaged in off-farm employment but were engaged part-time in farm employment; and 1,545,000 (9.1 per cent) were engaged entirely in off-farm employment. Thus 6,759,000 (39.7 per cent) were counted as being employed in the non-agricultural sectors of the economy. As these statistics show, in 1970 there were on the average 1.27 persons engaged in off-farm employment per farm household.

Further relevant information is given in table VIII. This shows that in 1968 the average contribution of farm income to consumption expenditure in farm households was 52.8 per cent. The proportion varied by size of farm. Thus in the 0.1 to 0.3 hectares class it was only 10.1 per cent, but even in the 1.0 to 1.5 hectares class, which comprises large farms by Japanese standards, it was still not more than 73.5 per cent. Table VIII also shows that the smaller the farm the smaller is the contribution of farm income to consumption expenditure.

Changes in the employment market are another factor to be considered in connection with the increase in part-time farming. The demand for labour from non-agricultural industries increased substantially as a result of the high rate of economic growth in the post-war period, while as already mentioned, the decline in the number of persons engaged in agriculture accelerated in the years following land reform. Industrialisation, combined with the transfer of factories to rural areas, made it

TABLE VIII. FARM HOUSEHOLD INCOME AND CONSUMPTION EXPENDITURE BY SIZE OF FARM, 1968

	All farms	0.1-0.3 ha.	0.3-0.5 ha.	0.5-1.0 ha.	1.0-1.5 ha.	1.5-2.0 ha.	Over 2.0 ha.
Farm income as % of consumption expenditure	**52.8**	10.1	19.6	44.2	73.5	91.6	111.2
Off-farm income as % of total income . .	**54.8**	91.2	82.4	61.5	38.5	25.7	15.9
Relative per capita income [1]	**83.2**	91.5	87.1	80.6	79.2	82.0	94.5
Relative per capita consumption expenditure [1]	**95.3**	107.0	104.8	94.0	88.7	89.0	95.7

Sources: Ministry of Agriculture and Forestry: Farm household economy survey; and Office of the Prime Minister, Bureau of Statistics: Family income and expenditure survey.

[1] Expressed as a percentage of that of the average non-farm worker's household.

possible for an increasingly large number of farm people to find off-farm employment within commuting distance.

Thirdly, account must be taken of changes in the level and pattern of consumption of farm households due to increased contacts with the non-farm way of life. These contacts were the result, for example, of reverse flows of non-farm people into villages in the immediate post-war period; the development of transportation facilities with the construction of highways and the opening of bus routes; the extension of mass communications media, in particular the radio and more recently television; the transfer of factories and housing to rural areas; greater opportunities for farm people to participate in holiday tours, travel overseas and international exhibitions; and increased non-farm employment opportunities.

I originally borrowed the term " demonstration effect " from James S. Duesenberry [1] to explain this phenomenon in earlier articles [2], but I now prefer to explain it as an effect of urbanisation, the changes being towards urban but not necessarily superior ways of life.

Some interesting facts emerge from the income and consumption expenditure patterns of farm households shown in table VIII. These reveal that the per capita income in a farm household, calculated by dividing the total farm household income obtained from farm and off-farm sources by the total number of persons belonging to the household, approximates to the per capita income in an urban worker's household, calculated in the same way, and the approximation between the two categories of household is even closer in the case of per capita consumption expenditure. Moreover, changes in consumption patterns due to urbanisation usually precede income improvements.

Such changes are sometimes made possible in farm households by cutting into savings or by selling assets. Farmers also endeavour to increase farm incomes by engaging in more profitable activities or by increasing yields. At the same time, with the many new sources of income created by industrialisation it has become possible, as mentioned earlier, for many farm family members to earn off-farm incomes which contribute substantially to reducing the gap between consumption expenditure and farm income.

Tables IX and X relate to the effects of the increase in part-time farming on agricultural productivity. Table IX shows that labour and land productivity both reached their lowest point in 1968 in category II part-time farms which, as noted above in table VII, have been increasing in number since 1955. Moreover, as can be seen from table X, this increase was particularly marked in the case of farms of under 1 hectare (about 70 per cent of all farms in Japan) during the past ten years.

[1] James S. Duesenberry: *Income, saving and the theory of consumer behavior* (Cambridge (Massachusetts), Harvard University Press, 1949).

[2] See, for example, Takeo Misawa: " Characteristic features of part-time farming in Japan ", in *International Journal of Agrarian Affairs* (London), Vol. V, No. 4, July 1968.

TABLE IX. AGRICULTURAL PRODUCTIVITY OF FULL- AND PART-TIME FARMS, 1968

(In yen)

Type of farm	Under 0.5 ha.	0.5-1.0 ha.	1.0-1.5 ha.	1.5-2.0 ha.	Over 2.0 ha.
	Net farm income per 10 hours of agricultural labour				
Full-time farms	1 019	1 420	1 620	1 972	2 354
Part-time farms:					
Category I [1]	2 130	1 746	1 979	2 197	2 507
Category II [2]	1 240	1 419	1 482	1 809	1 791
	Net farm income per 0.1 hectares of arable land				
Full-time farms	66 000	78 800	66 600	61 900	52 300
Part-time farms:					
Category I [1]	119 100	77 000	63 700	56 900	51 200
Category II [2]	40 400	41 700	41 100	41 600	35 500

Source: Ministry of Agriculture and Forestry: Farm household economy survey. Hokkaido is not included.

[1] See footnote 1 to table VII. [2] See footnote 2 to table VII.

It is interesting to note that the productivity of labour is higher in category I part-time farms than in full-time farms and that the number of category I part-time farms of over 1 hectare has been increasing in the past ten years. This would seem to imply that category I part-time farms, particularly those of over 1 hectare, are operated relatively efficiently, probably because in the low season their labour force is profitably engaged in off-farm employment and because they have sufficient resources to invest capital in labour-saving agricultural machinery.

However, it is not possible to be optimistic about their prospects, and there are grounds for believing that some of them may change into category II part-time farms. Because changes in the pattern and level of consumption of farm households are occurring under the influence of urbanisation and because the growth of farm income very often lags behind the new consumption requirements, category I part-time farms are likely to need more off-farm incomes in the future, and in this sense some of them may be at a point of transition between full-time farms and category II part-time farms. The steady increase in the proportion of larger-sized category II part-time farms is evidence of this trend. Once a part-time farm changes into category II this means that farm family members have become more interested in off-farm occupations than in

TABLE X. PERCENTAGE OF FULL- AND PART-TIME FARMS IN EACH SIZE GROUP, 1960 AND 1970

Size of farm	Full-time farms		Part-time farms			
			Category I [1]		Category II [2]	
	1960	1970	1960	1970	1960	1970
Under 0.3 ha. . . .	12.5	7.8	10.3	2.9	77.2	89.3
0.3-0.5 ha.	18.6	7.8	30.9	11.3	50.5	80.9
0.5-0.7 ha.	27.9	10.0	45.7	27.0	26.5	63.0
0.7-1.0 ha.	39.9	14.0	48.9	47.4	11.2	38.6
1.0-1.5 ha.	53.5	20.9	42.9	63.7	3.6	15.4
1.5-2.0 ha.	63.3	27.8	35.3	67.2	1.4	5.0
2.0-2.5 ha.	68.4	32.1	30.7	65.2	1.0	2.7
2.5-3.0 ha.	71.3	34.8	27.8	63.1	0.9	2.1
Over 3.0 ha.	73.0	39.6	26.0	58.0	1.0	2.4

Source: Ministry of Agriculture and Forestry: Census of Agriculture.
[1] See footnote 1 to table VII. [2] See footnote 2 to table VII.

farm employment, and both labour and land productivity decrease. Thus it is becoming increasingly difficult for the policy maker to find the right solution to part-time farming, particularly where it relates to small-sized farms.

Agricultural wages and economic development

In table XI post-war agricultural wages are compared with those in the pre-war years 1934 to 1936. It may be noted that relative wages, i.e.

TABLE XI. DAILY WAGE RATES OF MALE AGRICULTURAL WORKERS

Year	Relative wage [1] (%)	Real wage [2] (yen)	Year	Relative wage [1] (%)	Real wage [2] (yen)
1934	39.7	0.86	1962	46.9	1.15
1935	43.4	0.84	1963	49.8	1.28
1936	46.1	0.83	1964	51.1	1.39
			1965	50.3	1.38
1959	37.2	0.88	1966	49.8	1.40
1960	37.6	0.91	1967	49.0	1.43
1961	41.5	1.03	1968	50.2	1.67

Sources: *Agricultural wages for 1934-63*: M. Umemura *et al*: *Nôringyô* [Agriculture and forestry], Vol. IX of *Chôki Keizai Tôkei*, op. cit. (Tokyo, Tôyô Keizai Shimpôsha, 1966), p. 107; *for 1964-68*: agricultural wage index of the Ministry of Agriculture and Forestry. *Wages in manufacturing for 1934-64*: K. Ohkawa *et al*: *Bukka* [Prices], Vol. VIII of *Chôki Keizai Tôkei*, op. cit. (Tokyo, Tôyô Keizai Shimpôsha, 1967), p. 246; *for 1965-68*: Ministry of Labor: *Yearbook of labor statistics. Farm product prices for 1934-63*: Ohkawa *et al.*: *Bukka*, op. cit., p. 167; *for 1964-68*: farm product price index of the Ministry of Agriculture and Forestry.
[1] In relation to manufacturing wages. [2] At 1934-36 farm product prices.

wages in agriculture as compared with those in manufacturing, remained almost at the pre-war level until 1960, starting to rise after 1961 and reaching 50 per cent in the mid-1960s.

Real agricultural wages calculated in terms of 1934-36 farm product prices started to rise in 1959, and increased steadily until 1968, the latest year for which data are available. These figures would seem to show that since the end of the 1950s agricultural wages have been determined without regard to the subsistence wage level, assuming that pre-war agricultural wages corresponded to that level.

It is relevant here to consider the thesis of the " turning point ", which was first argued by W. Arthur Lewis. [1] According to Professor Lewis, the " turning point " of economic development is where the expansion of the capitalist sector of the economy results in the supply of labour becoming inelastic, because capital accumulation has caught up with the labour supply. This is the point where an unlimited supply of labour from the subsistence sector ceases to exist and where the limitations on the supply of labour begin to cause real wages to rise. The point made by Lewis seems very important in relation to the theoretical and empirical aspects of economic growth, particularly as regards the experience of Japan after the Second World War, and as regards determining whether and when the Japanese economy passed the " turning point ".

According to Kazushi Ohkawa [2], however, there are two turning points and not one. He argues that the first turning point of general economic growth in Japan, which broadly coincided with the turning point of agricultural growth, was reached in the post-war period, when the unlimited supply of labour which had been available over a long period of time began to dry up.

Professor Ohkawa considers that traditional factors still persist even though the first turning point has been passed and a part of subsistence agriculture is gradually being modernised. He agrees that the increased demand for labour for agriculture from non-agricultural sectors can be met after this point only by increasing wage rates, but maintains that the labour supply from the subsistence sector will become limited only to a certain extent. An economy characterised by these features is, according to him, in a phase of semi-limited supply of labour, which should be distinguished from an unlimited supply and a limited supply of labour.

There is no question that real wages in agriculture started to rise in Japan towards the end of the 1950s, so that the phase of unlimited supply of labour can be supposed to have ceased to exist about a decade after the introduction of land reform. In this sense, Lewis's thesis of a turning point can be supported.

---

[1] W. Arthur Lewis: " Unlimited labour: further notes ", in *The Manchester School of Economic and Social Studies*, Vol. XXVI, No. 1, Jan. 1958.

[2] Kazushi Ohkawa: " Agriculture and turning points in economic growth ", in *The Developing Economies* (Tokyo), Vol. III, No. 4, Dec. 1965.

However, even though real wages in agriculture are rising and the labour supply from the subsistence sector has become inelastic, the greater part of the agricultural sector is still far from being modernised. Small farms predominate and part-time farming is increasing. It will take a considerable time for Japanese agriculture to be modernised to the point where the supply of labour from it becomes totally inelastic. In this sense, if the thesis of the turning point is applied to Japan, Ohkawa appears to be correct in arguing that the second turning point should come after a long phase of semi-limited supply of labour.

Policy problems after land reform

Agricultural land policy

The Agricultural Land Act was adopted after the implementation of the land reform programme, its aim being to maintain the direct effects of the programme. Special emphasis was placed in the Act on measures to prevent the restoration of landlordism. Thus the transfer of agricultural land was strictly regulated by the Agricultural Land Committees, later known as the Agricultural Committees.

The regulation of the transfer of agricultural land by the Act, combined with the owner-farmer principle which has been the ruling concept of agricultural policy since the introduction of land reform, led to a certain inflexibility of the farm structure in Japanese agriculture in which the supply of land was very restricted and only limited opportunities were available to farmers wishing to enlarge the size of their holdings.

A recent amendment of the Act is intended to make transfers of agricultural land easier and to provide scope for farmers to lease land. It has removed the limit of 3 hectares which had been fixed as the maximum size of holding of arable land and has abolished rent control, which had completely lost its meaning as a result of inflation.

The new measures aim at removing regulations which have come to be regarded as obstacles to larger-scale farming, but how they will affect the owner-farmer principle remains to be seen.

Moreover, irrespective of these measures, it has to be borne in mind that farm people tend to hold on to their assets in the form of agricultural land. This is due partly to the owner-farmer principle and partly to a specific propensity of most farmers. The tendency is particularly marked in Japan, especially since land reform. There are various explanations for it. The agricultural land belonging to a farmer is very often regarded by him and his family as a source of stable employment, especially in times of depression; it is sometimes regarded as a form of security for the aged who cannot take advantage of the increased non-farm employment opportunities; and it is increasingly regarded by farm households as an asset of lasting value, especially in times of severe inflation and when the

price of land is expected to rise as a result of industrialisation. This attitude on the part of farm households is conducive to inelastic supplies not only of land but also of labour.

The need to establish viable units

While land reform was aimed at the general establishment of owner-farmers, it is evident that owner-farmers are not necessarily capable of operating viable farm units. The Basic Agriculture Act of 1961 was intended to achieve two main objectives: to reduce the disparity in the level of productivity between the agricultural and the non-agricultural sectors of the economy, and to strike a fairer balance between the standards of living of those working in them. Thus it must be supposed that its ultimate aim was the establishment of as many economically viable farms as possible. It has become clear, however, that it is not so easy for policy makers to ensure the creation of viable units. Part-time farms, which tend to be regarded as non-viable, have become even more numerous since the adoption of the Basic Agriculture Act. Moreover, they are also on the increase in some of the industrialised countries of Europe [1], and it would appear that part-time farming is becoming a common practice in industrialised countries.

The viable farm concept in Japan raises certain questions. A farm is regarded as viable when it is capable of earning a net farm income per person engaged in agriculture which is equal to, or more than, the income earned by a worker in industry. However, confusion arises because of the lack of a clear distinction between functional and personal incomes. The operator of a viable farm unit must be able to accumulate capital on the basis of his farm income, which is not simply a labour income but must also be used for agricultural investment, if he is to keep abreast in income formation with a non-agricultural worker who earns a labour income that increases in relation to the increase in labour productivity of the industry in which he is employed. It is not certain that the operator of a viable farm unit as defined above can do this in Japan. Thus the problem of the viable farm still remains to be solved, and it is now expected that programmes in line with the objectives of the Basic Agriculture Act will be introduced to tackle it.

Agricultural price policy

During the two decades succeeding land reform, some changes could be noted in the attitude of policy makers towards agricultural prices. From the end of the Second World War up to the middle of the 1950s, the Japanese economy suffered from a shortage of domestic rice, the

[1] See, for example, Corrado Barberis: *Gli operai-contadini* (Bologna, 1970). Also A. Brun, P. Lacombe and C. Laurent: *Les agriculteurs à temps partiel dans l'agriculture française* (Paris, 1970).

staple food of the nation. To increase rice production was one of the most urgent needs of the national economy during that period. It cannot be denied that land reform made a useful contribution by bringing about higher productivity in agriculture. However, the shortage of the domestic food supply relative to demand was to remain fairly severe for a few years after land reform.

Accordingly, the emphasis of agricultural price policy was placed on raising, by the application of a specific formula, the support level of the producers' price of rice in order to encourage production. This was then regarded as one of the key conditions for assisting the recovery of the national economy from the post-war disruptions. The domestic supply of rice steadily increased, partly owing to the response of agricultural production to price incentives and partly owing to the development of agricultural technologies. These achievements may to a great extent be attributed to the effects of land reform, which stimulated the sense of initiative of owner-farmers.

Agricultural price policy has been changing since the end of the 1950s. The aim of price support has switched from providing incentives for increased rice production to raising farm incomes. This is because, as we have seen, equity in the incomes of those working in the agricultural and non-agricultural sectors of the economy has become an increasingly important objective, particularly since the adoption of the Basic Agriculture Act in 1961. At the same time, it is evident that the problem of the small size of holdings, which land reform failed to solve, has become even more difficult with the rapid growth of the national economy. However, unless there are larger farms, raising the support level of agricultural prices—and in this connection rice is a key product—will not of itself achieve an equitable distribution of incomes between agricultural and non-agricultural workers.

The need for further policy measures

In conclusion, the importance of structural policy must be emphasised. While it is true that the effects of land reform were remarkable, the land reform programme was not sufficiently thoroughgoing from the point of view of modernising the agricultural structure. The problem of small-size farming was left untouched and has increasingly become an obstacle to the further promotion of labour productivity in agriculture.

To promote agriculture, then, policy makers must make more energetic efforts to improve this structure. Structural policy should include measures for the amalgamation of farms, the security of old people engaged in agriculture, sound land utilisation, etc. A solution is also needed to the problem of part-time farming. The formulation of such a policy is worth attempting, because Japanese agriculture will be required to play an important role in economic development in the years ahead.