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THE "MODERNISATION" OF AGRICULTURE AT THE PRESENT STAGE

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I Patterns in an Advanced Capitalistic Country

There is something remarkable in the capitalistic agricultural development achieved in the U.S.A. after the War. A total number of as many as 5,860,000 farms in 1945 decreased to 3,600,000 in 1962, and the average farm land increased from 195 acres to 360 acres, the total number of tractors increasing from 2,400,000 to 4,800,000. The number of population fed by one farmer increased from 15 in 1950 to 27 in 1962, and the proportion of the farming population against the total population showed a decrease from 18 % to 7.5 %. The agricultural products produced by 6,800,000 people engaged in agriculture in 1962 not only fed the total population of 188,000,000, but the surplus was exported to the E.E.C. countries in the amount of approximately $ 1,200,000,000, approximately $ 500,000,000 to Japan and $ 235,000,000 to India, The total amounting to approximately $ 5,140,000,000[1].

With respect to the classification by class of American agriculture which can be regarded as the most adequate from the economic viewpoint, the following changes in the 15 years immediately after the War

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1) Taken from *Fact Book of U.S. Agriculture*, 1963.

can be seen when the year 1944 is compared with the year 1959. The total number of farms showed a sharp decrease of 2,000,000, while the amount of agricultural products of 100,000 large-scale farms showed a double increse from $ 20,000 to $ 40,000 (Table 1). Consequently, class I farms which used to produce more than $ 20,000 worth of agricultural products in 1944 dropped to class II in 1959, (although the increased price-level after the War must be taken into consideration). If this class II were to be counted as large-scale farms, then the number of such farms would become three times as many, i.e. 300,000. However, it can be assumed that approximately 1,500,000 farms lower than class V were living poor lives and that 880,000 part-time farmers were living unstabilised lives, though their standards of living varied to a great extent. The report published in May 1964 has it that "According to the latest census (the World Census of 1960) the average annual income was $ 6,166 for an urban family, and $ 3,228 for a farmer in a rural area. One-third of the farming families in rural area had an annual income of less than $ 1,000, and in the case of urban families those having the same amount of annual income occupied only less than onetenth."[2] These figures can well be taken not only to show the difference in

Table 1. Classification of Farms according to the Annual Total Turnover

Class	1944 Agricultural Turnover (Unit: $ 1)	No. of Farms (Unit: 1,000)	Class	1959 Agricultural Turnover (Unit: $ 1)	No. of Farms (Unit: 1,000)
I	Over 20,000	102.1	I	Over 40,000	101.835
II	8,000-19,999	408.9	II	20,000-39,999	210.162
III	3,000- 7,999	1,173.0	III	10,000-19,999	482.478
IV	1,200- 2,999	1,661.9	IV	5,000- 9,999	653.150
V	500- 1,199	923.5	V	2,500- 4,999	616.819
VI	250- 1,199	602.2	VI	50- 2,499	348.473
VII	Under 500	987.3	VII	Other farms	1,288.447
				Medium farms with Side-business 50-2,499	881.883
				Farms of the Retired 50-2,499	403.527
	Total	5,858.9		Total	3,701.364

Figures for 1944 are taken from *America no Nogyo* (*American Agriculture*), Iwanami Shashin Bunko, No. 29, 1953; Figures for 1959 are taken from *1960 World Agricultural Census*.

2) M. L. Upchurch, "Progress in Resolving the Problem of Rural Poverty", *Journal of Farm Economics*, Vol. 46, No. 2, 1964, p. 430.

income between the agricultural and industrial fields and the low standard of living of as many as approximately 1,200,000 farmers whose livings were poor, but also to give a vivid description of the expedious breaking-up of some agricultural classes after the War. Many of the over 100,000 large-scale farms that had an annual production of over $ 40,000 were found to have been operated by hired agricultural labourers*, frequently having the characteristic nature of capitalistic enterprises. However, it is found that many farms lower than class II belonged to the family-type, If viewed from the number of farms, the number of farms of family-type counted more than 2,000,000, comprising the greater part of all the farms in the U.S.A. It can be said that these farms constituted the nuclei of American agriculture, providing the basis of Jeffersonian's democracy even these days. In short, it is worthy of notice that the number of farms of family-type showed an overwhelming proportion as an absolute number of agricultural managements in the U.S.A., where agriculture was predominating and developing in the form of capitalistic enterprises.

*In this connection I shall show the distribution ration of wage-earners among those who were engaged in agriculture in the U.S.A. in comparison with that in the United Kingdom, France and West Germany.

Country	Year	Agricultural Population	Wage-earners in Agriculture	%
U. S. A.	1962	6,800,000	1,800,000	26
U. K.	1951	1,109,000	544,000	49
France	1954	5,132,000	720,000	14
West Germany	1957/8	3,808,000	501,000	13

These statistical figures are taken from the following sources:

U. S. A. ... *Fact Book of U. S. Agriculture*, 1963, p. 52.

U. K. ..... *West Europe Shokoku ni okeru Nogyo Kihon Mondai to Kihon Taisaku* (*Agricultural Basic Problems in the West European Countries and Basic Countermeasures*), Pt. 3, United Kingdom, p. 16.

France ..... Takekazu Kokura, France no Nogyo Mondai (French Agricultural Problems), in *Nogyo Kiki no Gendankai-teki Seikaku* (*The Nature of Agricultural Crisis at the Present Stage*), pp. 136, 149. It is, however, said that if part-time workers were to be included, the percentage would be over 20%.

West Germany ... *Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten*, 1958, S. 42. However, this figure was based solely on the full-time wage-earners, if the part-timers were to be included, the percentage would be greater. See R. Yamaoka, Sengo West Germany no Nogyo Kozo (Agricultural Structure in Post-war West Germany), in *Nogyo Kiki no Gendankai-teki Seikaku* (*The Nature of the Agricultural Crisis at the Present Stage*), p. 256.

II The Difference between the American Farmer and the German Bauer

In 1904 M. Weber compared the agriculture of the European Continent, particularly Germany, where he was born, with that of the U.S.A., where he had stayed for some time as an honored guest[3] and observed that American farmers were characterised by an absolute economic individualism, i. e. by a purely businessmanlike personality, and pointed out that an entirely different type of farmer existed in Europe. He further stated that the way in which such a difference could have been developed could be sought in the specific capitalistic influence on farm land in the extremely densely populated, old and civilised countries. Moreover, the influence of tradition came to produce such family-type farmers in the European Continent that couldn't be found in a newly developed country like the U.S.A. Holding that the most typical one above all others is the European 'Bauer', he placed stress on the difference in the historical development between the 'farmer' and the 'Bauer'. It is explained that the 'Bauer' never produced in order to make gains like a businessman, but that they simply sold their surplus products, as they used to from very early ages. In Europe the market came into existence after the producer was born, while in the U.S.A. the market had been in existence before the producer was born. It is said that the farmers in the U.S.A. were producing for the market. This statement can well be taken as a straightforward expression of the difference between the two, though it is rather exaggerated. In this connection we must make a special note of the difference between the 'Bauer', who had been subjected to the pressure of their history from the very beginning, and the American type of farmers who were small scale enterprisers by birth, having the character of independence——the original pattern of existing self-sufficient management.

Furthermore, German agriculture was obliged to trace the course of capitalistic agricultural development which was most typical of the Prussian pattern that took primarily place in the districts of the Ostelbe, and for that reason the agriculture under the Junkers' control was subjected to feudal restrictions extensively and deeply for a long period of time, thereby being kept from making a normal development. The "West German farmers", called typical Parzellen-Bauer by Marx, were forced to trace a twisted course of the normal capitalistic development up to the period of World War II. Due to the splitting of Germany

3) M. Weber, "Capitalism and Rural Society in Germany", in Max Weber, *Essays in Sociology*, edited by H. H. Gerth and C. W. Mills, New York, 1946, pp. 363–385.

into East and West after the War the "West German farmers" came to free themselves from the bonds of the Junkers' economy and began to take a new step towards making themselves independent policy-makers by separating themselves from the Junkers. Now, what course of development will the "West German farmers" take in the future under the monopolised capital which came to make its appearance with a new program of their own? What kind of pattern of agricultural development will be formed in a relatively advanced country*, in contrast to the highly advanced capitalistic U.S.A. (*in West Germany they call themselves a 'relativ hochentwickeltes Land'), i. e. a half-advanced capitalistic country, by freeing themselves from a great part of their historical pressure, marking an epoch of World War II? This question itself is the sole proposition of this paper.

III Recent Views about the Stage of Development Reached by West German Agriculture

After stating that the present stage of development of West German agriculture is a transitional stage between the manufacturing stage and the large-scale mechanical engineering stage by modeling after the division of the stage of production power in the engineering field, I have already stated that it is situated at the starting point to move from the first phase to the second phase of mechanization[4]. Lately H. H. Herlemann and H. Stamer of Germany have presented their views with respect to the typical stage of technicalization in highly densely populated countries[5], which seems to be a representative view in West Germany. It is classified into the following four stages: first—the stage of condensation, second—the phase of intensification, third—the phase of mechanization and fourth—the phase of integrated management, each of which will be briefly explained here.

The stage of condensation: In a country with a high density of population where manufacturing industry is not developed, capital being scanty and, though labour is available in abundance, capital being in extreme scarcity, as the population increases, the outward expansion of the size of agricultural land comes to its limitation, and under the circumstance where there is no way to make a living other than agriculture, the substantial wage comes to be decreased in comparision with the level of

4) R. Yamaoka, Sengo West Germany no Nogyo Kozo (The Agricultural Structure in Post-war West Germany), in Tochiseidoshigaku-kai (Agrarian History Society) (ed.), *Nogyo Kiki no Gendankai-teki Seikaku (The Nature of the Agricultural Crisis at the Present Stage)*, 1963.

5) H. H. Herlemann, und H. Stamer, *Produktionsgestaltung und Betriebsgrösse in Landwirtschaft unter dem Einfluss der wirtschaftlich-technischen Entwicklung*, Kieler Studien, H. 44, Kiel, 1958.

the ground rent, and the result of this brings about the curtailment in management, thus the situation leading to the pattern of management under intensified labour. The social division of labour brought about concurrently with industrialisation absorbs the surplus labour. The pressure to decrease wages recedes, the more demand for food is necessitated, the further the ground rent is raised. Simultaneously the prices of capital goods as products of manufacturing industry decrease, stimulating the intensification of capital. Such means of production that can bring forth a greater harvest are more often used and the land comes to be replaced with capital. In this way the agricultural stage launches into the phase of intensification.

The phase of intensification: As the tendency of increasing population gradually comes to be slowed down and the import of agricultural products increases, the rising rate of prices of agricultural products and the ground rent come to hit their ceiling. The cost of investment of capital is lowered and substantial wages begin to rise due to the shortage of labour. As a result, such means of production that can economize labour come to be more frequently used. Labour is replaced by capital. In this way the phase of mechanization sets in.

The phase of mechanization: As the state of complete employment comes to be nearly actualised, the progress of manufacturing productivity comes to be knocked off by the striking rise of wages, the standard of living is raised, and Engel's coefficient is lowered. The further the decrease of the cost necessitated for the investment of capital is prevented, the more the ground rent begins to be lowered. As far as agricultural productivity can manage to cope with increasing wages and the growing demand for such an increase, it becomes possible labour to be replaced by land for the time being. In this way for the average scale of agricutural management is forced to become larger and larger and its development arrives at the entrance of *the phase of integrated* management. According to this theory it is stated that in a newly-developed country with a sparse population, like the U.S.A., the process of development mentioned will take place in a reverse order.

Now, putting aside my own personal opinion of such a theory with respect to the stages of economic and technical development to be given later, I shall give here some actual examples of such a theory applied in West Germany by referring to the recent writings of Professor Dr. W. Schaefer-Kehnert of Göttingen University[6].

The state of the present development of West German agriculture

6) W. Schaefer-Kehnert, „*Wandlung in der Agrarstruktur unter dem Einfluss der Technik*", *Berichte über Landwirtschaft*, Bd. 39, H. 2.

is grasped as being in a transitionary stage from the phase of mechanization to that of integrated management. The assertions made by the above-mentioned professor can be briefly given as follows. The phase of intensification has in reality come to terminate in West Germany, the phase of mechanization has come close to its end and the phase of integrated management is just beginning to make its appearance. This stage of development is characterised by bitter strains, because the structure of the scale of management which was obliged to be kept growing and fixed for a long period of years came to be washed away by rapid streams, and the linkage to the labour system which had to be formed in the past came to be cut off. As far as the phase of intensification is concerned, since there was practically nothing to be done in the quantitative relations with respect to the utilisation of the two fundamental factors of production, such as land and labour, this phase was passed through with relatively small friction. Consequently, the scale of management and the labour system were succeeded and retained as they used to be. The use of means of production to increase the production power of land has only resulted in the increase of the amount of invested capital. In this stage some changes took place not only in the extent of intensification but also in the form of production. The crops yielding the greatest possible gross profit, which could be easily intensified, say crops in ploughed fields, came to be brought in, idling came to disappear, and intermediary crops came to be adopted as farm products. Although a certain tendency toward a curtailed scale of management was observed as the demand for labour power increased, such a change was not so great. The reason is because comparatively large-scale management could take stopgap measures by using seasonal labour and by adopting the labour-saving means which had already been started to be used to tide over the increasing demand for labour, and comparatively small-scale management could also do so by making the best use of the available labour power.

In this way the agricultural structure in West Germany which was predominantly characterised by the prevalence of small-scale management of family-type came to be substantially retained throughout the phase of intensification in the stage of undeveloped manufacturing industry. It can be said that there was almost no change at all in the scale of management and the system of labour at this stage.

As the transition to the phase of mechanization began to take place, some fundamental changes began to appear. A new combination of factors of production was of necessity obliged to be made in the structure of the scale of management and the system of labour. The reason was

because various prerequisites were necessitated, which were entirely different in nature and which had never been required while operating for the purpose of gaining the increased harvest by using certain supplementary means to economize labour. Thus, here lies the inevitability of the transition to integrated management.

Now, if some of the problems arising out of the aforementioned theory with respect to the transitional stages of the agricultural development in West Germany are to be pointed out here, in the first place we can see that this theory of transitional stages is formed only on an abstract idea of the social phase of the fundamental means of production——land, labour and capital——and that it deals with the purely economic phase only. The ground rent, wages and capital interests are grasped as if they were a trinity, so to speak. In the second place, for the above-mentioned reasons the theory is lacking in historical considerations and a dynamic grasp of the transition from one phase to another is not sufficiently made. In the third place, it is asserted that the density or scarcity of population will bring about exactly the opposite development of the phase, but it is too weak an argument to assert the reverse development of the phase on the single ground of population density. For instance, it is asserted that the transition has taken place in the U.S.A. in reverse from the phase of mechanization to the phase of intensification, but the phase of intensification which follows the phase of mechanization and the phase of intensification which precedes the phase of mechanization should be grasped as something utterly heterogeneous in nature. As for me, I am rather of the opinion that the next phase which follows the phase of mechanization in the U.S.A. would be the American phase of integrated management, as clearly understandable even from the simple statistical figures quoted at the beginning. In the fifth place, mention is made to the effect that the phase of condensation will come into existence as a final phase of transition from the phase of intensification, but this particular phase of condensation is not the phase of condensation conceived in this theory of transition, i.e. that which existed in the period of one-time capitalism, but the phase of condensation existing in the period of highly-developed capitalism, and the two should be clearly distinguished from one another. In short, all that is discussed leads to the conclusion that this theory with respect to the transitional stages of agricultural development gives us a faithful and systematic description of the transitional development of agriculture in various countries on the European Continent, particularly in West Germany, during the limited period after the War, but it is hard to think that it has made a great contribution in systematically grasping

the economic development of agriculture in the capitalistic countries.

IV The Fundamental Standpoint with Respect to the Grasping of the Transitional Stages of the Capitalistic Development in Agriculture

I am going to briefly discuss the fundamental standpoint with respect to the grasping of the transitional stages of capitalistic development in agriculture, making it a clue to clarify the pattern which characterises the agricultural development of a half-advanced country like West Germany.

The economy of capitalism is of such a nature that it was possible to permit the inheritance of an obsolete and out-of-date land-structure as a matter of course and the elimination of the historical and social composition previously formed would undoubtedly have a progressive meaning. And in truth that was exactly what really happened, but under such circumstance capital remained a predominant and determing factor, both in the process of agricultural production and in the field of the whole of economic life for a long time in the past and more so at present.

What was emphasised by Marx in Chapter 37 of Volume 3 of *Capital* is the truth that capitalism in agriculture does not *fundamentally* depend on the form of landownership and land tenure. Needless to say, capital is confronted with extremely varied kinds of landownership of medieval or patriarchal types, i. e. feudalistic ownership, tribal ownership, communistic ownership, national ownership, etc. Capital, however, subordinates all these kinds of landownership to itself *in various forms and by various methods.*

In the meanwhile I do not think that we have a complete understanding of the various forms and methods, through which capital subordinates the various types of landownership to itself. It is specially important to have a better knowledge of it. Lenin stated in his "New Data on the Laws governing the Development of Capitalism in Agriculture" (*Collected Works*, Vol. 22, Moscow, 1964, pp. 47-48) as follows: The New England division, where is no colonisation at all, where farms are smallest, where farming is most intensive, shows the highest level of capitalism in agriculture and the highest rate of capitalistic development. This conclusion is most essential and basic for an understanding of the process of capitalistic development in agriculture in general, because the intensification of agriculture and the reduction in the average farm acreage that goes with it is not some accidental, local, causal phenomenon, but one that is common to all civilised countries. Bourgeois economists

of every stripe make a host of mistakes when considering data on the evolution of agriculture (as in Great Britain, Denmark and Germany) because they are not familiar enough with this general phenomenon, they have not given it enough with this general phenomenon, they have not given it enough thought and have not understood or analysed it (*ibid.*, p. 49). There is a necessity for us, I think, to gain a further understanding of it through the analysed results of Lenin's insight into one form or method of subordination of land to capital, which inevitably takes place at a certain stage of the development of capitalism in agriculture—a roundabout and passive dominance of capital over land, so to speak.

Kautsky is the first man who had an excellent graps of the capitalistic development of agriculture in his *Agrarfrage* and who advanced a systematic theory. It is true that he made a great achievement, but it must be noted that he was obliged to be placed under the limitation of his days, and he failed to observe the varied courses of development in detail that took place at each phase because he attempted to explain the process of such a development in too simple a manner. It seems to me that he attempted to analyse the concentration and accumulation of capital on the one hand, and the concentration and accumulation of land on the other, on a supposition as if they would proceed in straight lines in parallel (K. Kautsky, *Agrarfrage*, Japanese Transl., Iwanami Bunko, Vol. 1, pp. 155, 156, 260, 263). But on the one hand it can not be said that the subdivision of land is necessarily in the capitalistic development at a certain stage of its development, and on the other that the vast ownership of land can not cast off *the old skin* of the feudalistic ownership of land. Besides, even if the ownership of unbounded land were to be modernised, a conservative opposing current in agriculture as described by M. Weber (cf. R. Yamaoka, *Nogyo Keizai Riron no Kenkyu, Study of Agricultural Economic Theories*, p. 98) would be brought, which would even give rise to the fear that it might result in hampering the capitalistic development of agriculture politically. Consequently, it could even be assumed that the concentration and accumulation of capital as one thing, and the concentration and accumulation of land as another thing, might exhibit quite an opposite tendency, making an adverse contrast to the way of Kautsky's thinking. At least as an important problem at the present stage, what is essential is to try to learn something without turning our eyes away from the fact that the process of the concentration and accumulation of capital is tending to become more and more independent of the system and distribution of landownership.

When such a stage where landownership has no binding power over the reproduction process, or in other words where landownership can

not display any power of its own, is reached, there arises a possibility that another kind of stage where production power could be developed by the free practice of the "purposive application of agricultural science" as desired. Capital, being directly concerned with land and its ownership, comes to be a determining factor. Here the form of the required capital, and the method and amount of capital to be used in or for the land, come to bear a conclusive nature.

As a result of the unbalanced developments respectively made in the two different fields of agriculture and manufacturing industry due to the historical limitation which are inherent in any capitalistic society, the process of development of agricultural production power seems to have lagged one stage behind if compared with that of manufacturing industry. We know that the use of tractors introduced a technical revolution in agriculture, but even so an almost 100-year-gay in comparison with manufacturing industry can be observed. It is not too rough a guess to assume that, when the various stages of development of agricultural production power are classified, modeling them after manufacturing industry, into the manual stage, small-scale management stage, manufacturing stage and large-scale mechanical engineering stage, present day agriculture is still in the manufacturing stage, while industry is predominantly characterised by the stage of large-scale mechanical engineering. Needless to say, a classification of this kind can only serves for convenience's sake, and it can not strictly so useful as in the case of industry, but I think that it might be helpful when applied to the field of agriculture.

Lenin made the following statement with respect to the characteristics of the agriculturing stage in his "Agrarian Question and the 'Critics of Marx'" (*Collected Works*, Vol. 5, Moscow, 1961, p. 141): "The predominance of hand labour and simple co-operation, the sporadic employment of machines, the relatively small extent of production, the relatively limited market for the most part, the connection between large- and small-scale production——all these are symptoms of the fact that agriculture has not yet reached the stage of real 'large-scale machine industry' in the Marxian sense. In agriculture there is no 'system of machines' as yet linked into one productive mechanism." In this connection we can see that Lenin took into consideration whether or not there existed the use of *a system of machines linked into a single productive mechanism* as a factor to determine the agricultural manufacturing. He further stated on the same page that "in its general technological, and perhaps even economic, level, modern agriculture is at a stage of development which more than anything resembles the stage of industry Marx

described as 'manufacture'", and the stage of development of modern agriculture was prescribed in general as a transitional approach to the manufacturing stage. Lenin made a repeated emphasis of the same implications in his "New Data on the Laws governing the Development of Capitalism in Agriculture" written in 1915 (*Collected Works*, Vol. 22, Moscow, 1964, pp. 107-108).

The book entitled *Vechio e Nuovo nelle Campagne Italiane*, 1956 (Japanese Transl. by Nakamura and Uehara, *Italia Nogyo no Kozo-teki Kaikaku*) written by Emilio Sereni of Italy contains the results of application of the above-mentioned view to the period before and after World War II. In this book Sereni goes on to say that the characteristics of the stage of Italian agricultural development are approaching not the stage of large-scale mechanical engineering but the production stage which is very close to the manufacturing assumed on the basis of the extent of its development observed on the eve of World War II and during the early period after the War, and he positively holds the opinion that Italian agriculture, as far as the whole postwar period is concerned, has been taking rapid steps toward the manufacturing stage for passing through the manufacturing stage, if it couldn't positively be said that it had already passed through the manufacturing stage of development (*Ibid.*, Transl., pp. 58-). It is clear enough from his description of the postwar period that the expression, "being in the stage of production which was very close to the manufacturing stage" doesn't imply that the manufacturing had already been passed through.

So far I have explained some of the fundamental ways of thinking about the key by which a certain stage of agricultural development can be identified in terms of the classified stages of development of agricultural production power as described in the above, and by which the course of its future transitionary development can be determined. The scale for measuring development is not simply concerned with whether the so-called functional composition of capital is high or low, but it is also concerned with the problem of the substantial content and relations of the functional composition of capital in addition to the problem of its mere ratio. Lenin also took the two elements of employed labour and mechanization into consideration as a major viewpoint always to be used as a measure of capitalistic development. However, the difficulty of such a method is that it is hard to make a correct judgement in the case of agriculture only by means of a simple comparison of the invariable capital C against variable capital V. The investment of capital up to a certain size of land is called agricultural intensity. Supposing that LNF represents a cetain unit of the size of agricultural land, the inten-

sity is expressed as $\frac{C+V}{LNF}$. Now, in the case of agriculture by examining and evaluating the respective numerical values of C and V against LNF on the basis of this intensity, it becomes possible to determine the extent of agricultural development.

V The Development of the Agricultural Structure in West Germany

The proposition in the technical field of agricultural production is concerned with two problems: the first is how to improve techniques to increase the quantity of the harvest from the land and the second is how to improve techniques to increase the efficiency of human labour, i. e. how to economize human labour. In the course of such technical improvement it can by assumed that especially the second problem may well be solved on the supposition of a change in the agricultural structure. If exprossed from a long-range view, it will take the form of a confrontation of the development of production power with the relationships of production. In particular the problem will present itself as a change in the scale of management, alterations of labour system and conversion of the form of production. The process of alteration of the agricultural structure is now being undergone at present in half-advanced capitalistic West Germany. However, it takes an extremely long period of time for the agricultural structure to meet the requirements of the desired techniques and the state is now making every effort to expedite the process of such adaptation to the required techniques that comprises a problem of vital importance to agriculture through various agricultural policies. Its concrete illustration is none other than the "Basic Law of Agriculture" (Das Landwirtschaftsgesetz) and other laws[7], the practice of which is seen in the so-called Grüner Plan. The basic line which penetrates through all these projects is to create independent managements by facilitating the expansion or integration of the size of farm land, grouped farming and the diversion of tenant farming. In addition to the above we can add the restrictions placed on the import of agricultural products from areas other than the E. E. C. countries as a result of cooperation with all the E. E. C. countries, the enforcement of agricultural policies set forth by the European cooperative community, of which a major problem is to expedite the free movement of agricultural labour, and the various countermeasures for social assistance from the European cooperative community based on the consideration of social

7) *West Europe Shokoku ni okeru Nogyo Kihon Mondai to Kihon Taisaku (Agricultural Basic Problems in the West European Countries and Basic Countermeasures)*, Pt. 1, West Germany, p. 75.

Table 2. Changes in the Scale and Structure of Agricultural Managements

	Year	Size of Agricultural Land (hectares)							
		0.5-2	2-5	5-10	10-20	20-50	50-100	100	Total
No. of Managements (Unit: 1,000)	1949	604.6	555.1	404.5	256.9	112.7	12.7	3.1	1949.6
	1960	467.6	388.9	343.8	287.1	122.2	13.7	2.7	1626.6
	1961	450.7	371.6	336.6	289.5	123.8	13.8	2.7	1588.7
Increase or Decrease (Unit: 1,000)	1949-1960	−137.0	−166.2	−60.7	+30.2	+9.5	+1.0	−0.4	−323.6
	1960-1961	−16.9	−17.3	−7.2	+2.4	+1.6	+0.1	+0.0	−37.3
Percentage	1949-1960	−22.7	−29.9	−15.0	+11.8	+8.4	+8.0	−11.2	−16.6
	1960-1961	−3.6	−4.4	−2.1	+0.8	+1.3	+0.5	−0.1	−2.3
Size of Agricultural Land (Unit: 1,000)	1949	656.1	1837.8	2863.9	3548.5	3251.9	824.3	562.8	13545.3
	1960	502.3	1296.0	2489.6	3999.3	3510.4	888.7	466.9	13153.2
	1961	484.5	1239.2	2440.0	4034.3	3548.2	902.8	472.0	13121.0
Increase or Decrease	1949-1960	−153.8	−541.8	−374.3	+450.8	+258.5	+64.4	−95.9	−392.1
	1960-1961	−17.7	−56.8	−49.6	+35.4	+37.5	+14.0	+5.3	−31.9
Percentage	1949-1969	−23.4	−29.5	−13.1	+12.7	+7.9	+7.8	+17.0	−2.9
	1960-1961	−3.5	−4.4	−2.0	+0.9	+1.1	+1.6	+1.1	−0.2

This table is prepared from *Grüner Bericht, 1961 & 1692.*

policies[8].

Now, we shall turn to the latest moves in the agricultural structure of West Germany, which is described as being in the process of alteration, by referring to Table 2.

I shall desist from making minute explanations about Table 2; all I want to point out is the fact that the tendency which I had traced in detail by statistical numerical values up to 1958 cf. R. Yamaoka, *Nogyo Keizai Riron no Kenkyu* (*Study of Agricultural Economic Theories*), pp. 149–163 was found to have been prolonged up to 1961. Taking up only those cases of over 0.5 hectare farm lands, the total number of managements showed a decrease, in fact by 361,000, during the period covering 1949–1961, most of them occurring in farm lands smaller than 10 hectares. The trend of increase was found to occur among managements as big as 10–100 hectare farm lands as used to, and above all it appeared that the trend to increase among 10–20 hectare farm lands had not been enervated. The case of large-scale managements of over 100 hectares showed a decrease of 400, its decreasing percentage being a little over 11 %. Here the trend of concentration of medium-scale farms was observed. Nevertheless, it is also possible to consider that the 10–20 hectare classes constituted large-scale farms, i. e. the farming bourgeoise as pointed out in the description of the classification of classes which was prepared by Lenin based on data from the German Census of 1907[9]. However, in view of the fact that the number of full-time hired labourers decreased to an extreme extent, particularly after the introduction of powerful machines[10][11], in those days in the course of almost half a century——even the number of the part-time hired labour was tending to decresse, I would rather consider that this class constituted the medium-scale farms by classifying the former as being one class lower, because the important implication prescribed by Lenin, "no class of management can get along unless they can always use wage-labour",

8) *Dokumente der Konferenz über die sozialen Aspekte der gemeinsamen Agrarpolitik*, 1961.

9) V. I. Lenin, The Capitalistic Structure of the Present Agriculture, in *Collected Works*, Vol. 16, p. 454.

10) The number of tractors per each 100 managements of the 10–20 hectare class counts 72.6 in 1957. Taken from *Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten*, 1958.

11) In contrast to as many number of managements of the 10–20 hectatre class in 1960 as 287,100, the total numbers of full-time hired labour——male and female——in May 1960 only remained 48,000. Even if part-timer hired labour is included, it counts about 190,000, of which as many as about 130,000 is female labour. In other words male labour remains as few as 60,000, including the part-timers. These figures are taken from *Statistisches Jahrbuch für die Bundesrepublik Deutschland*, 1962, S. 166. As to the annual decrease in the total number of hired labour, full-time hired labour power shows the following sudden decrease: from 548,600 in 1956 to 321,700 in 1960, and part-time hired labour power: from 649,900 to 484,500.

came to be almost meaningless nowadays, and I simply couldn't stand for the description of the bourgeois farmers.

If I were to prepare a classification of the classes of agricultural managements based on my own experience in making observations throughout rural area in West Germany for one year some ten years ago, it would turn out as follows: the size smaller than 2 hectares was under proletarian management, that of 2–5 hectares was managed by poor farmers, that of 5–10 hectares by typical peasantry (refer to the peasantry described by Engels), and that of 10–20 hectares by the middle class. This middle class has been making every effort to minimize the cost of full-time hired labour by replacing hired labour with mechanization since the payment of wages became excessive. The government is giving assistance to them by appropriating loans or subsidies, but it may possibly happen that the government may suffer from too much pressure of necessitated funds. The decrease and or disapparance of unmarried labour as called 'Gesinde' from this middle class has had a most serious influence. Yet in the busy farming season they simply can not get on without part-time hired labour. The very core of the farmers of so-called family-type lies here. Needless to say, depending upon the differences in geographical, historical and economic conditions in each district, this class may be classfied lower to 7.5–15 hectares or raised to the maximum of 25 hectares[12]. Lastly I would rather prescribe 20–50 hectares as large-scale farming and 50–100 or over 100 hectares as farming under capitalistic management.

VI The Pattern of the Agricultural Development in West Germany

So far in the foregoing section I have described the change in the agricultural structure during the period covering 1949–1961 as a trend of the concentrated middle class.

Needless to say, it is undoubtedly partly due to a series of policies in West Germany that such a trend began to appear in an increasing tendency after the War. But, how should the underlying reason for such a distinctive development be accounted for?

Now, our present problem in this connection is to make a legitimate and factual explanation as to what has made the agriculture of West Germany develop into the present stage. If the formula of German agri-

12) An excellent analysis of the actual status of the structural changes taking place under regionally different circumstances is contained in Dr. F. Rieman, „Grösse und Verbleib aufglöster landwirtschaftlicher Kleinbetriebe", *Berichte über Landwirtschaft*, Bd. 40, H. 2, 1962, SS. 244–290.

cultural development is seen, though roughly form the viewpoint of the development of her production power, through the following two different periods, i. e. the period starting from the middle part of the 19 th century, when biological development began to be mainly introduced in the field of agriculture, and the period of rapid motorisation after the War, though the introduction of the steam-plough into agriculture prior to this period may present a problem, steam-ploughs had a very limited use and they were never used in a wider area than 1 % of all German cultivated land. Consequently, it is not at all erroneous to disregard them. The development of the production power of labour was of rather of secondary importance in this period and the essential proposition then was the production power of land, i. e. the greater possible harvest per unit area. The portion of C in $\frac{C+V}{LNF}$ was mainly composed of consumer goods, such as fertiliser and other means of production which produced the same effectiveness, regardless of the difference in the scale of management. During this period they reached the stage of small management. What made this stage distinctively distinguishable from the second stage began from the replacement of animal power by motor. The determining power of the development in the second stage was indeed such a motorisation movement. The traditional practices which used to be maintained in the preceding stage, acoordingly all factors which were preventing the development of production power came to be dispensed with here. In other words, capital began to have the controlling power. Agricultural management which used to depend exclusively upon the combination of land and labour gradually tended to depend more and more upon the other industrial fields which could furnish machinery and other types of production means. It required less land and less labour power for the same quantity of production and simultaneously the *greater* amount of investment of captal. When this stage was reached, the stage of the development of agricultural production power was passed through, penetrating into the manufacturing stage. If seen from the change in the number of tractors, the figure exceeded 200,000 in July 1952, but it was in 1954 that approximately half of the 10–20 hectare class came to possess tractors, when the total numbers of tractors were as many as 300,000. The total number in 1958 was close to 650,000 and nearly half of the 5–10 hectare class came to possess tractors then. However, the total number of combines, which are more powerful than tractors, was only a little over 2,000 in 1958. This stage is in the first place characterised by a highly specialised level of the functional structure on a new foundation as a result of the breaking up of the balance between land and labour in the past because

of the greater decrease of the demand for labour power than the increasing demand for labour power necessitated for further increase of production power. In the second place this stage was characterised by the circulation of capital, which comprised one of the most important factors to determine the extent of development of agricultural management. Consequently, as far as it was practically impossible to possess the desired machines or other means for large-scale management by private funds, there were no other ways than making use of loans from other sources, inevitably resulting in more dependency upon banking facilities or government assistance for the appropriation of the needed funds. The third characteristic is that it came to be a matter of vital necessity to eliminate all possible conditions that might prevent the the introduction of machinery. The urgent problems to be solved in this connection were concerned with the improvement of irrigating conditions, the reconstruction of agricultural roads, and a large-scale project to make readjustments ar integral exchanges of inadequate and small-size arable land from the point of view of improving the size and form of the existing cultivated land. For this purpose it was required that the prerequisite conditions which would permit a reasonable use of modernised management should be created. It was not until such a time when these conditions were satisfactorily provided that the transition to the stage of large-scale mechanical development came to be completed by the materialised use of tractors as one consistent policy. Fourthly, it gave rise to the need of training to raise the qualitative level of management itself and hired labour, by whom such rationalisation had to be carried out. Now, though I have to conclude my paper very briefly due to the limitation of space, I can draw the following inferences from all that has been said.

The stage of development of agricultural production power new being reached by West Germany is in the initial position of the transition from the manufacturing stage toward the stage of a large-scale mechanical engineering industry; that is, if more definitely expressed, the process of mechanization by adopting tractors is coming close to an end. They are beginning to reach the initial stage of adopting combines, and yet this development is rather held up for some reason. Putting it an other way, it can be assumed that they sit in the stage of the transitional process from the first phase to the second phase of mechanization. In such a particular stage, middle class farming which represents 10–20 hectares is still far from the completely systematical mechanization, although partial mechanization or motorisation to some extent is now being carried out as an inevitable result of the scale of the size of agri-

cultural land and requirements of mechanization. The increase of the portion of *C* for the purpose of mechanization is tending to result in the decrease of hired labour power, and moreover this particular stage has the characteristics by which the level of development of the greater part of this middle class should be evaluated one stage lower, on account of the twofold reasons of the increase of needed capital for one thing and the more clamorous social evaluation of the farmers' living standard for an other.

The develpment of agricultural production power in West Germany is in the state of coming to a standstill in trying to pass through the frame of middle class farming of the family-type by attempting to expand the size of land due to the requirement of captal itself. Every effort is being made to free it by various pushes, such as the international competition of agricultural products, the opposing agricultural consciousness against East Germany, many regulations concerning agricultural products in the E. E. C. countries, etc. Furthermore, the increase in operating costs and the increase of living expenses are driving the middle class farmers in to a crisis where they are being obliged to disintegrate.

The latest achievement of Dr. Riemann of the Agricultural Social Association (Agrarsoziale Gesellschaft) in Göttingen contains a summary of the hearing-survey, showing the particular kind of agricultural management which was destined to be ruined in as many as 170 localities in four major districts during the period covering 1949-1960[13], the figures of which are very suggestive. Though this survey can not be entirely free from being inadequate on account of its regional limitations, I am confident that such data can be used to support the aforementioned description.

The problem lies in the change that occurred in the 7.5–15 hectare farms. (However, in this survey the group of 10–20 hectares is unfortunately not classified as one unit-group). During the period up to 1960 the class mentioned is found to comprise the disintegration-axis. Putting it an other way, the way the disintegration took place upwards and downwards from this disintegration-axis can easily be grasped if the figures of the percentages, such as the increase in the distribution of the size of land and the decrease both in the number of managements and the size in the change of absolute numbers are compared with the decrease in all cases of the 5-7.5 hectare class and the increase in all cases of the 15-30 hectare class. This is clearly indicated in the following Table.

Attention is invited to the fact that according to this Table the 7.5-15 hectare class comprises 21 % of declining managements, including 8 % of dropping off, 16 % of rising managements and 63 % of maintenance of the status quo, all of which means that the 7.5-15 hectare class has a higher stability if compared with

13) F. Riemann, *a. a. O.*, SS. 268, 266.

Table 3. Changes in the Distributions of Management and Size of Farm Land in View of Managements, Scales and Classes in the Surveyed Districts

Scale & Class (hectares)	Distribution of Manegement		Distribution of Size		Changes in Absolute Numbers	
	1949/53	1960	1949/53	1960	No. of Managements	Size (hectares)
0.5-1	25	22	2.3	1.5	−1231	−890
1-2	20	17	3.8	2.4	−1082	−1522
2-5	24	20	10.1	6.3	−1241	−2986
5-7.5	9	8	6.9	5.0	−333	−1999
7.5-15	12	16	16.6	16.5	−131	−815
15-30	6	11	17.2	21.0	+158	+2974
30-100	3	5	20.6	23.1	+38	+1660
100-	1	1	22.5	24.2	+4	+698
	100	100	100	100		

Table 4. The Development of the Scale and Structure of Agricultural Managements in 1949/53

hectares according to Class of Scale	No. of Managements in 1949/53	Disappeared Managements	Distribution of Managements in 1960 (hectares)							
			0.5-1	1-2	2-5	5-7.5	7.5-15	15-30	30-100	100-
		Percentage of Management in 1949/53								
0.5-1	3230	66	28	5	1	0	0	0	-	-
1-2	2677	43	19	30	7	1	0	0	-	-
2-5	3111	26	7	14	43	8	3	0	-	-
5-7.5	1115	15	3	4	17	35	24	2	-	-
7.5-15	1570	8	1	2	4	6	63	16	0	-
15-30	827	4	0	0	1	1	6	78	10	-
30-100	434	2	1	0	-	0	2	6	88	1
100-	100	1	-	-	-	-	-	-	-	99

lower class, but a lower stability if compared with the higher class, and that the balance after all is towards a declining tendency. It should not be overlooked that the 5-7.5 hectare class clearly shows disintegration in an increasing tendency, while the 15-30 hectare class shows a high stability, but this class includes 12% of the declining managements. In short, this Table clearly shows the tendency to disintegrate of the 7.5-15 hectare class.

VII Conclusion

So far I have attempted to clarify the "modernisation" of agriculture at the present stage, fixing the focus on the pattern of agricultural development in West Germany. When the existing agricultural structure

in West Germany is grasped the phenomenal form, a tendency of concentration of medium-scale farms is definitely observed. I don't think, however, that it is a fixed tendency. The middle class shows a certain indication to disintegrte almost at any time. Nevertheless, their stage of agricultural development is different from that of the post-war development achieved in the U. S. A. The phase of development in West Germany these days seems to be more of the level of the stage in the prewar period in the U. S. A. In other words, West Germany is just gradually beginning to trace the course of the phase through which American agriculture was obliged to pass with the sweat and blood of farmers, during the crisis of the 1930's. It can be assumed that the intrinsic difference of the original German 'Bauer' from the American farmers will certainly be marked in the course of future German agricultural development. The process of development may not be so fast as it was in the U. S. A. Similarly in Japan various policies to improve the agricultural structure have also been adopted, and many arguments have been advanced about tomorrow's agriculture, but unless the ideal image is formed, or the target is fixed, on the basis of the rigid recognition of the difference from such stages of development where as many capitalistic farms as 100,000 in the U. S. A. and at least 16,000, though smaller in scale, in West Germany are in existence, and under such circumstances where a fairly large number of large-scale farming bourgeoisie are in operation, mere informational knowledge will result in doing more injury than good to the future of Japanese agriculture.