A STUDY OF INCREASED FOOD PRODUCTION IN NIGERIA: THE EFFECT OF THE STRUCTURAL ADJUSTMENT PROGRAM ON THE LOCAL LEVEL

Shuhei SHIMADA
Graduate School of Asian and African Area Studies, Kyoto University

ABSTRACT The paper is composed of two parts; The first surveys the changes in Nigerian national food production with relation to the governmental policy. The second analyses the findings from a field study about local food production in relation with that of the national level.

Nigerian food production began to increase in the mid-1980s, however there is no substantial data to convince it. To what extent this was due to the Structural Adjustment Program (S.A.P.) is assessed using the methodology of political ecology. This paper is an attempt to show how and to what extent the change in agricultural production in national level has connected with that of local level.

It's highly probable that introduction of S.A.P. has effect to increase food production, through extensive changes in cultivation, such as diminution of mixed cropping, shortened fallow periods, and partial desolation of cultivation fallow systems. These all lead to the increase in cassava production, which may have been attained at the ultimate sacrifice of land degradation.

Key Words: Nigeria; Food Production; S.A.P.; Political Ecology.

INTRODUCTION

Nigerian food production is enigmatic. It could feed the nation until the 1960s, became short of the demand in the 1970s, and after the mid-1980s it soared up again to be able to feed the nation. However there is no substantial supporting data.

Many explanations were given by many scholars about this. However, no scientist felt comfortable with it, because they knew that the data on food production was not reliable. There are several different production figures even for a single crop. And the increase rates of production of rice, cassava, maize, and yams since the mid-1980s are extraordinarily high. There is no doubt that one of the most grave and urgent needs for agricultural scientists in Nigeria is to get more reliable data about food production. Only such effort will serve for furthering our understanding and for allowing proper planning of agricultural production in Nigeria.

We cannot wait until more accurate data is collected; we have to use unreliable data in such a way that we "read" it for the real meaning. At the same time we should try to collect first hand data ourselves which can contribute to our understanding. This paper is one of such attempt in which the author tries to analyse the effects of the Structural Adjustment Program (S.A.P.) on food production in Nigeria.

Many papers and books have been written on the topic. As far as food production

is concerned, there seems to be consensus that the S.A.P. has influenced increased food production. Several reasons are given for this, such as: import restriction or ban of rice and wheat, increased price of food, increase in population in rural area (due to return migration from urban centres), farming in the town, etc. We do not know however, whether these reasons make influence on the increase of food production in mutually-related or independently, or how they come into effect to increase it. The differences between crops or regions which may show us the diversity in its effect have hardly been discussed.

In this paper, the author examines the extent to which change in agricultural production on the national level has been connected with that of the local level, and the mechanism of such change, if any. The paper has two parts. In the first part, change in food production will be surveyed with relation to the governmental policy on the national level. In the second part, some of findings of a field study of local food production will be shown, and the relationship between the food production of the national level and that of the local level will be analysed.

FOOD PRODUCTION AND AGRICULTURAL POLICY IN NIGERIA SINCE INDEPENDENCE

Before analyzing the impact or effect of S.A.P. on food production in Nigeria, agricultural policies which were taken before S.A.P. will be reviewed. This will maediate how much influence the S.A.P. had.

To examine agricultural policy and changes in food production in Nigeria since independence, the author has sub-divided the period into three sections. The first is before 1975; the second is from 1976 to 1985; and the third is after 1986.(1) During the first period, agricultural policy was more or less laissez-faire, while stagnation in food production became clear. In the second period, the government commenced policies to encourage food production to counter the serious food shortages. The third one is the period when the S.A.P. was put into effect.

There was significant change in agricultural policies between the first and the second period, and this change, a departure from laissez-faire, also changed the interests of researchers studying food production in Nigeria. Thus, before discussing the changes in food production, studies on food production that appeared in Nigerian agricultural studies since the 1960s will be reviewed.

I. A Review of Studies on Food Production

There are two streams in the studies of Nigerian food production. The first sees that the food production sector in Nigeria potentially has enough productivity to supply domestic demand, and food shortages that may occur are merely temporary phenomena. The other sees a limit to Nigerian food production, and reveals the structural problem in the existing food production system.

The former had been the basis for policies towards food production during the no-policy regime in the first period. The recognition that Nigeria was able to increase its food production to meet the growing demand up to that time appeared as an atti-

tude to leave food production to individual producers, something of a negligence in food production policy (Okigbo, 1962: 63-64; Helleiner, 1966: 24-29; Olayemi, 1972; Famoriyo, 1972; Oni, 1972). Nigeria experienced significant shock when starvation emerged in eastern Nigeria after the Biafran War (1967-70), and when in 1972-74 drought in northern Nigeria brought disastrous damage. However, this shock was soon dissolved by growing income from oil exports, that enabled the government to import food. In this way, the government failed to acknowledge the food shortages of the early 1970s as a result of fundamental problems in food production, and felt no need to alter the laissez-faire policy. Instead they often attributed the cause of food shortage to a lack of incentives towards food production (Federal Ministry of Economic Development, Nigeria, 1975; Oyaide, 1981).

However, since the latter half of the 1970s, when oil revenues started to shrink and dependence on imports to cover food shortages were felt insecure, the government altered its policy from one of negligence to one of active encouragement of food production. The policies in the second period included Operation Feed the Nation (OFN) programs and the "Green Revolution" Plans. Under these policies, various types of subsidies were issued using the oil revenues.(2) as giving incentives to farmers was thought to be the shortest path to increase food production (Central Bank of Nigeria, 1992: 34-35).

This policy attitude was altered as S.A.P. commenced in the third period, and the policy focus shifted from giving incentive to removing the impediments that hindered the incentives. The policies of this period were totally different from the former period in the way of imposing incentives, though consistent in attributing the stagnation of food production to the lack of incentives. The food production policies had altered from providing infrastructure and subsidizing agricultural inputs to price incentive via various deregulation.

There was a minority group of people who suggested that the problems were in the Nigerian food production system itself, and such suggestions affected Nigerian agricultural developments. Of this group, there were many who pointed out the limitation that communal land ownership institution imposed,(3) thus advocating a need for agrarian reform. Their logic was that communal land ownership subdivides land into smaller plots, and thus prohibits land accumulation to active farmers and hinders agricultural investment. However, the switch from communal land ownership to private ownership in Nigeria is a slow process, and the 1978 Land Use Act had only a minor effect.(4) The types of agrarian reform advocated by researchers varied from partial to overall private ownership, but researchers were unanimous that the traditional land ownership institution was an impediment to food productivity.

Another impediment imposing a limit to productivity, it has been argued, is agricultural technology (United Nations FAO, 1966: 33-39), and this was often pointed out in reference to the agriculture of the savannah region in northern Nigeria where food shortages frequently occurred. The traditional farming method there relied solely on rainfall. Northern Nigeria, being the most densely populated region within the West African inland areas, had been a chronic food shortage region since before the colonial days. Mass seasonal migration that occurred traditionally to the coastal region in the dry season was explained as a reaction to cope with the structural food shortages (Prothero, 1957). The researchers holding this line of argument have

attributed the frequent food shortages that occurred in northern Nigeria since 1970 to the limitation of the prevailing farming method. Led by this limitation of rainfed farming theory, the necessity of irrigation was strongly felt, and materialized as the River Basin Development Schemes actively pursued since the mid-1970s (Muroi, 1989a).

It has been argued that in southern Nigeria, land shortage was the greatest barrier to increasing food production (Essang, 1973), and these opinions also attribute Nigerian food shortage to its food producing potential. Land shortages in southern Nigeria were exacerbated by the rapid population growth after independence. In regions where increased demand for food cannot be resolved by expanding arable land, the existing fields should be cultivated more frequently, with shorter fallow periods (Shimada, 1977). The argument recognizes that this resulted in destruction of the soil fertility restoration cycle, causing soil erosion, and finally to stagnation of food production.(5)

As a measure to tackle the productivity limitations of the traditional farming methods, two competing opinions exist: one is to introduce a high yield breed, and the other is to re-evaluate and improve traditional farming methods.(6) The former opinion materialized as active encouragement of introduction of improved breeds, pesticides and chemical fertilizers in the National Accelerated Food Production Project (NAFPP) since 1974, the Agricultural Development Projects (ADPs) since 1975, and the OFN since 1976. The latter opinion is relatively new, appearing in the beginning of the 1980s, and projects based on this are yet to be put into practice.

The new discussion has started rather abruptly when the Government has decided to commence S.A.P. in 1986. The effect of S.A.P. on agricultural production has become the main issue, because the policy aimed for liberalization of the market and de-regularization. Policies such as cuts in subsidies related to food production and abolition of regulations are thought to have great impact not only on cash crop production but also food production. Liberalization and de-regularization does not mean a return to the laissez-faire policy. The laissez-faire policy in this period is fundamentally different from the no-policy attitude of the first period. Many papers have noted that the government encouraged cash crop production through exchange rate intervention, and its intention to boost food production was even more clear than that in the second period.

In the following sections, the transition of Nigerian food production and food related policies will be examined in detail by each period.

II. Food Production and Agricultural Policy before 1974

1. *Food production before 1974*

The food production of the period since the 1960s to 1974 was marked by stability in the first half of the 1960s and the rapid decline in the latter half of the 1960s. Problems did not exist in the first half of the 1960s as stable yields were gained for all crops. However, in the latter half of the 1960s, especially since 1967 when the Biafran War broke out, production of crops began to show a rapid decline. This was especially so for cassava and yam, the staple food of southern Nigeria. Despite a lack of statistics before and after the Biafran War (1967-70), it is likely that yield of these root crops decreased much more than sorghum (Guinea corn) and millet, the

staple food of northern Nigeria.

The war, with its battlefields mainly in the southern regions, has severely affected food production there. Heavy drought affected Nigeria in 1972, and the yields of sorghum, millet, and maize also declined in addition to cassava and yam. In 1973 and 1974, drought-resistant millet recovered its yield to a level high above the average of the former five year period, but yields of cassava, yam, and sorghum in 1973 could not reach the average of the same five year period. In this way, the first food shortages in Nigeria began to emerge in the first half of the 1970s.

In 1973, the Nigerian government effected the emergency import of over 100,000 tons of wheat but this was more a measure to stop rises in food prices in urban areas than to supplement domestic grain shortages (Central Bank of Nigeria, 1992: 32-33). This is because it was root crops that were in heavy shortages and grain crops yielded relatively better than root crops that year. Regardless of which crop failed however the kinds of crops imported in the emergency were limited to internationally traded crops such as wheat and rice, and continued in 1976 and 77 when a large amount of rice was imported. It is argued that this had the effect of changing the preference of urban dwellers, the main beneficial of urgent imports, to those internationally traded crops (Shimada, 1983). Hence, the emergency import of 1973 might have contributed to an increase in demand towards wheat and rice, and this in turn is related to the encouragement of raising them in mass irrigation programs since the latter half of the 1970s.

2. *Agricultural policy before 1974*

Agricultural researchers are unanimous that Nigeria neglected policies for food production during the 1960s and the first half of the 1970s. The government has concentrated on industrialization, especially on import substitution industries, and export crops were seen as its capital source and managed collectively in the marketing board, whereas no action was taken for food crops.

The degree to which Nigeria had been confident in her natural resources including agricultural resources just after her independence can be exemplified in the first line of the first National Development Plan to 1962-68, which trumpets that "...it is righteous that Nigeria is potentially a prosperous country" (Federal Ministry of Economic Development, Nigeria 1963: 1). This Development Plan aimed to exploit abundant resources for improvement of the living standards of her people, set GDP growth target to 4% per annum with agriculture, industries, and put the highest priority on middle and higher education (Federal Ministry of Economic Development, 1963b: 22).

However, the share of investment to the primary sector was only 13.6% whereas the shares of industries, electricity, and the transportation system added up to 50%. Hence, this development plan focused mainly on infrastructure provisions.

Also within this development plan, it was designed that regional governments of Northern, Eastern, and Western Nigeria would also take development plans of their own in addition to that of the Federal Government. Such decentralized political governance[7], could have acted as an advantage for agricultural development policy in Nigeria where staple food differ by region, but only exports crops of each region attracted attention, and no significant policy was made about food production.

The Second National Development Plan, for years 1970/71-1973/74, was enacted

right after the Biafran War. The main aim of this development plan was to restore the economy damaged by the war, and agriculture was still its utmost priority. However, again the budgetary share for agriculture was only 10.5%, and the expenditure realized was 7.7% of the total (Federal Ministry of Economic Development, Nigeria 1975: 25). Still within the agricultural sector, the weight was on restoration of export crop production, and the food-producing sector attracted only scant attention.[8] Meanwhile, the expenditure share of the transportation sector alone was 23.1%.

There were criticisms of this government's pretence towards agriculture, mainly from the people who advocated modernization of agriculture. They claimed the necessity need to abolish the communal land ownership institution that limits the productivity of traditional agriculture, and to introduce a new breed and agricultural machines. However, their prescriptions were difficult to materialize, so as a consequence, their contributions were as ineffective as the government's pretence of commitment on agriculture.

The author has included the first four years of the 1970s in the first period because, as discussed above, in these years the neglect of agriculture was basically retained despite the declaration of the contrary. The food shortages which resulted from the Biafran war, and subsequent effects of the 1972-74 drought have undermined the optimistic view on agriculture that was prevalent in the 1960s. Impending crisis was felt, but no action was taken. The government chose to rely on imports of maize, wheat, and rice, rather than to address measures to strengthen food production (Muroi, 1989b; Shimada, 1983: 151-153). The changes in imports of crops are shown in Figure 1.

In 1974 NAFPP was started, which aimed to increase production of rice, maize, millet, sorghum, cassava, and wheat. The program assisted supply of seeds, fertilizers, and pesticides, education of farmers, sales of agricultural products, and stock management and processing. Agro Service Centres were built all around the country, which started from mini-kits, then production-kits, and finally diffused them to public. However, these services could not even provide agricultural inputs at the right time, and before it could achieve any substantial results, the main constituents were transferred to the ADP in 1975 (Okuneye, 1992).

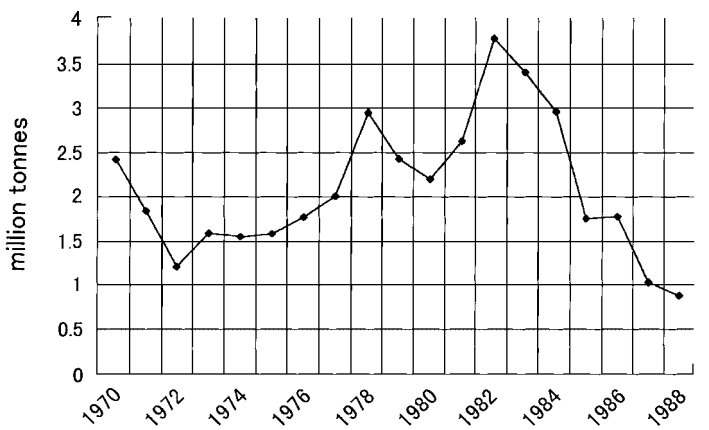


Fig. 1. Food Import.

III. Food Production and Agricultural Policy in the Period 1975-85

1. *Food production in the period 1975-85*

Changes in production of major food crops in Nigeria are shown in Figures 2-6. Six available data sources are shown using different line symbols. There are large differences among statistics for yam, cassava, and maize, and rapid increases since 1988 must be read with caution. Discrepancies for root crops arise because these crops are harvested whenever they are needed, whether for consumption or for sales, and otherwise stored under the soil. Thus the production of these crops is the amount dug up within a fiscal year, but their accurate estimation is almost impossible. This is why, in some cases, the estimation differs by five times. The author will not discuss the reliability of the statistics any further, but will instead focus on the trends of the changes.

The changes in production of food crops in the period 1975-85 can be characterized as follows:

① The production of cassava and yam were continuously in decline since the 1970s throughout the period, except for 1975.
② The production of sorghum is rising.
③ The production of maize had a peak in 1975, then declined until 1983 to less than 600,000 tons, but recovered in the latter half of the 1980s to more than 1,000,000 tons.
④ There were no substantial changes in millet production.

In general, the decline in production since the 1970s continued during this period. The only exception was sorghum, but this crop, although increased throughout the period, reached only the level of the early 1970s. It was only at the end of this period that it could recover the mean level of the 1960s (4,000,000 tons). Thus, these figures demonstrate that government's effort to increase food production has not yet materialized.

2. *Agricultural policy in the period 1975-85*

In 1975, the government set up Agricultural Development Projects (ADPs). These projects were an extended version of the NAFPP at 1974, to include more comprehensive measures in addition to the provision of agricultural inputs, such as provision of infrastructure of constructing agricultural roads, building small-scale dams, and installing Agro Service Centers.[9] In the end of the period in 1985, there were 470 Agro Service Centers all over the country (Okuneye, 1992: 74), and thus this project could become the first organizational project in Nigeria. While this ADPs had been the projects that gradually diffused into rural areas, there were other projects that aimed to boost food production. One was the OFN since 1976, and the other was the 'Green Revolution' Plans. These projects were innovative in the history of Nigerian agricultural policy in that they proved a shift of the government's attitude toward active participation in food production.

The OFN was actively advertised to public, using mass media, and was substantially implemented. The aim of the project was to build a stable and self-sufficient socio-economic system by increasing food production to the level sufficient to feed the growing population, and to lower the import dependency ratios. Thus, not only

the farmers but all citizens were called for co-operation. Distribution of fertilizers and improved breeds, extermination of insects and diseases, and lending of agricultural tools and machines were pursued not only by farmers but also by all citizens, including military men and civil servants. Mobilization of university and polytechnic students in farming during the summer vacation was also pursued.

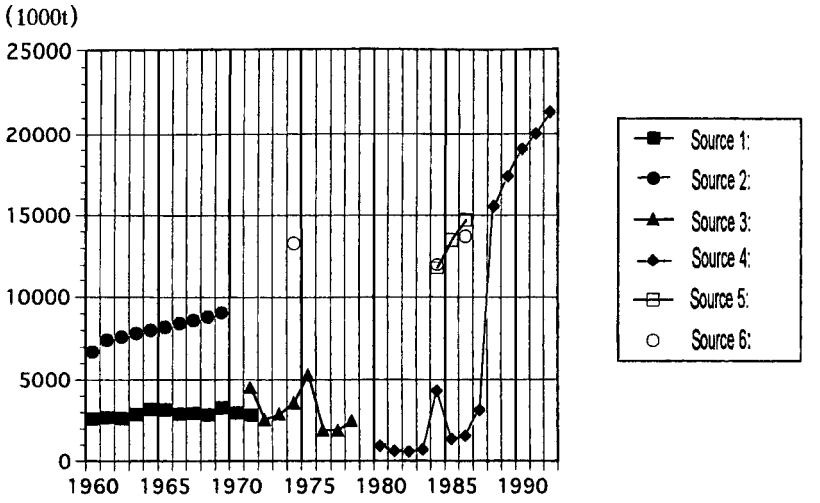


Fig. 2. Production of Cassava.
Source:
Source 1: Olatunboson, D., *Nigeria's Neglected Rural Majority,* Ibadan, Oxford Univ. Press, 1975, p. 15.
Source 2: Abumere, S.I., "Traditional Agricultural Systems and Staple Food Production", in *A Geography of Nigerian Development,* eds. by J.S. Oguntoyinbo et al., Ibadan, Heinemann Educational Books, 1978, p. 215.
Source 3: Nigeria, Federal Ministry of Agriculture and Water Resources, *Establishment of Agricultural Statistics and Agro-data Bank*, p. 28.
Source 4: Central Bank of Nigeria, *Economic and Financial Review*, Vol. 24., No. 4 (1986), p. 83. and *Annual Report and Statement of Accounts*, 1988, p. 18; 1989, p. 19; 1992, p. 78.
Source 5: *AED Special Report, Nigeria*, May 1986, p. 20
Source 6: *West Africa*, 12 May 1986, p. 990.

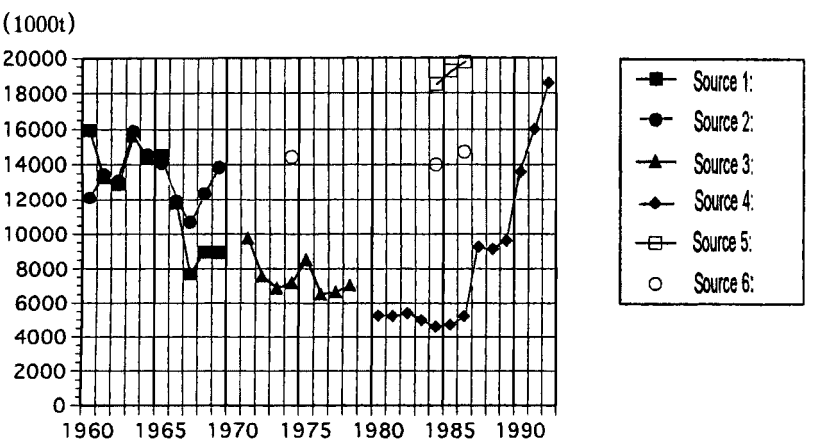


Fig. 3. Production of Yam.
Sources: same as Fig. 2.

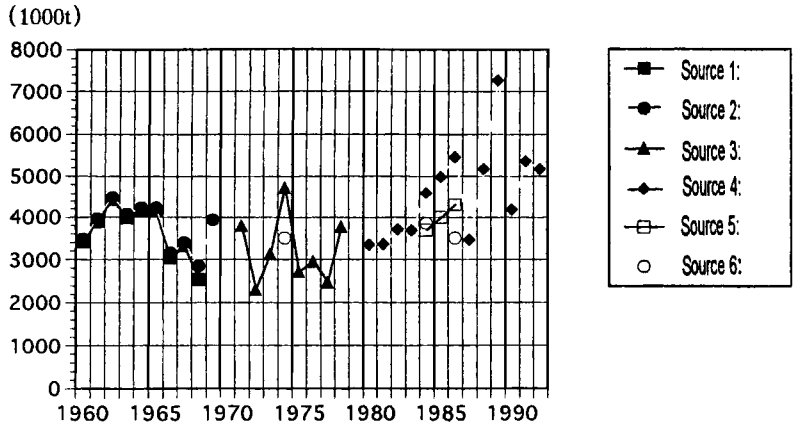


Fig. 4. Production of Sorghum.
Sources: same as Fig. 2.

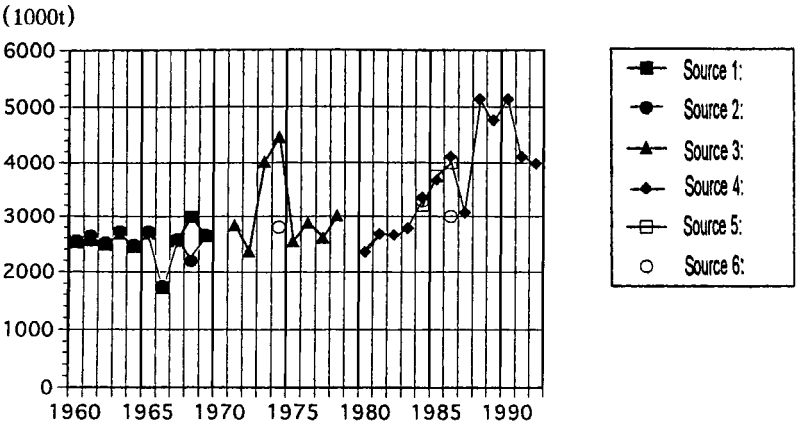


Fig. 5. Production of Millet.
Sources: same as Fig. 2.

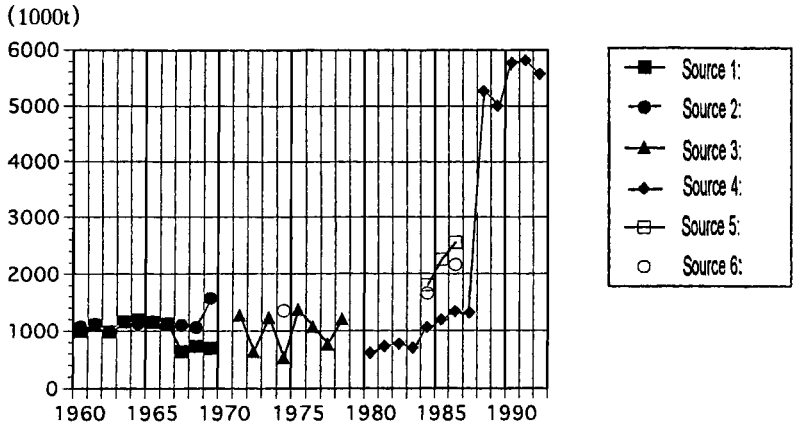


Fig. 6. Production of Maize.
Sources: same as Fig. 2.

However, there are doubts on the effects of the OFN compared to ADPs. The OFN was propagated almost every day through newspapers and radio. However fertilizers, pesticides, and farming tools distributed under this project either free or at low cost were allocated mainly to military men and civil servants, and were utilized mainly in their back yards (Okuneye, 1992: 69-82). The students were mobilized to farms, to fill the labor shortages in rural areas, and were basically new to farming, little help to farmers. Meanwhile the government had to pay the sum of 82,000,000,000 Naira for their wages, accommodation, and transportation costs. Despite its popularity among the people for the propaganda issued by the military government of the time, it is doubtful that this project had a real effect in increasing food production.

Yet, this project has importance as the first policy that government actively intervened to increase food production, and used the media to publicize to all citizens the governments attitude toward stagnating or decreasing agricultural production. The myths believed until the 1960s that Nigeria was self-sufficient in food production was at last abandoned by this time, and no papers related to agriculture have mentioned the self-sufficiency of Nigeria in food since then.

When the government changed from the Obasanjo's military government that forcefully pursued the OFN, to the democratically elected Shagari government in October 1979, the Fourth National Development Plan (1981-1985) was enacted. The scale of this plan with a total budget of 70,500,000,000 Naira reflected the oil revenues of the late 1970s. The plan aimed at improvement in real earnings, equality in income distribution, lowering of unemployment and under-employment rates, increased skilled labor, diversified economic activities, growth with equality among regions and sectors, and strengthened self-sufficiency of the economy by utilizing domestic resources more efficiently. The agricultural sector and the agricultural processing sector were designated as the first priorities for development, and the largest share of budget, 13.1% (9,260,000,000 Naira) was allocated to the agricultural sector (Federal Ministry of National Planning, n.d.: 32-34).

Regardless of the OFN, the food shortage in Nigeria worsened, and it continued to be a headache for the Shagari government. To counteract this situation, the government additionally set out the "Green Revolution" Plan in 1980. This plan aimed to achieve self-sufficiency in food provision by 1985, when the Fourth National Development Plan terminated. For this goal, the plan emphasized the need for comprehensive development of the rural areas, and the projects were concerned not only on food production per se, but an building food processing firms, developing rural roads, providing houses, improving education and health facilities, and installing of water and electricity systems. The plan was pursed by the partnership of agencies such as the Ministries of Agriculture, Water Resource, Labor, and Commerce; 11 River Basin Development Authorities (RBDA) established in 1976; and ADPs.

This "Green Revolution" had much a more comprehensive character than the OFN, but in reality, the largest support went first to the RBDA, which resulted in a concentration of investment in Northern Nigeria where many river basin projects were carried out. Improved rural road and education facilities were election promises of the National Party of Nigeria (NPN) led by President Shagari (Udo, 1982: 80). Thus, the abolition of the OFN and the enactment of the "Green

Revolution" was not merely about a change in agricultural development policy but also a reflection of political matters. The criticisms that this plan favored the northern region, the election base of the NPN, were not without reason. The plan, which in part aimed to increase cereal production, implied favor of the northern region where cereals were traditionally grown.

One and a half years after the "Green Revolution" Plan had been enacted, researchers gathered at Ahmadu Bello University in Northern Nigeria to hold a seminar about the plan. As a result of this seminar, overutilization of seeds, fertilizers, and pesticides was condemned; redesigning of irrigation projects to consider local environment and be more realistic were requested; and preference on improvement of locally used machines rather than introduction of large machines was suggested. As for the entire plan, it was emphasized that dependency on foreign powers should be avoided as much as possible in terms of both manpower and technology (Abalu, *et al*., n.d.: 324). At that time, it was already recognized that the "Green Revolution" Plan had depended too much on imported inputs and foreign direction in irrigation projects.

The OFN and the "Green Revolution" Plan shared the same sense of crisis in terms that both admitted the end of self-sufficiency in food provision and the need for direct intervention in food production. However, the two were different in that the former had been the plan under the military regime whereas the other was under a democratic one. Secondly, the former began as a movement of the entire country, whereas the later ended as a plan impartially favorable to the northern region.

IV. Food Production and Agricultural Policy since 1986

1. *Food production since 1986*

The statistics vary on food production since 1986 thus we should be careful even for drawing the roughest picture. This section uses the Central Bank of Nigeria estimation (which includes yield statistics for all crops) as a base source. However, as is clear from Figures 2-6, the remarkable increase in yield since around 1987 or 1988 seems unrealistic, thus this source is also subject to further scrutiny. Nevertheless, it can be said that all crop's production showed consistent increase after 1987, and the overall trend of decline in food production since 1960 switched to increase. Such changes were never experienced since independence, and this is quoted for the effect of S.A.P. This implies that the influence of the S.A.P. was far greater than that of any other agricultural policy of the earlier periods.

If we look into more carefully to the figures, however we can see some different trends between crops since 1986. They are as follows:

① The rate of increase of root crops such as yam and cassava is much higher than that of cereal crops such as millet and sorghum.
② Cassava and yam hit nadirs in 1982 and 1984/85, respectively, but rapidly increased thereafter. The increase rate of cassava was the highest among crops.
③ Sorghum continued to increase after the second period (1975-1985), and regained the production level of the 1960s.
④ Millet increased after the mid-1980s, and its average production since 1985 exceeded that of the 1970s by 20%.

⑤ Maize also showed a high rate of increase, but it started only at the end of the 1980s.

Some of the causes and processes of these substantial increases in food production which had never materialized as a consequence of direct state intervention of the earlier period, will be discussed in the next section.

2. *Agricultural policy under S.A.P. since 1986*

President Babangida (in power after 1985), announced "rural development" as a priority in the 1986 budget speech, and set the Directorate of Foods, Roads, and Rural Infrastructure (DFRRI) under the direct control of the president and the military government's committee. This rural development plan was designed upon reflection that neither the OFN nor the "Green Revolution" Plan could improve the living of the rural people in real terms (Olanrewaju & Falola, 1992: 174-177). However only the road section, out of food, roads and rural that the DFRRI were in charge, did the development materialized. Moreover, those projects neglected the opinions of the Local Government (LG, the third tier government under State Government),[10] and access roads to large-scale farms of the influential owner were first improved.

The DFRII had no effect on food production, but the Marketing Boards (MBs) after 1986 were abolished, and the ground was prepared for the SAP to take effect swiftly.

The official decision to apply S.A.P. was made in July 1986. In September, the Second-tier Foreign Exchange Market (SFEM), which devaluated the Naira compared to the Dollar from 1.4192 Naira/$, to around 4 Naira/$, was established. This SFEM was merged and abolished in July 1987, and at this point the exchange rate was 3.95 Naira/$, so this means that the purchasing power against the dollar was substantially reduced to a third in one year. The Naira devaluation was the first implementation of the S.A.P.

Secondly, the subsidies for agriculture were substantially cut. Despite the criticisms that agricultural subsidies since the second period of the Nigerian agricultural

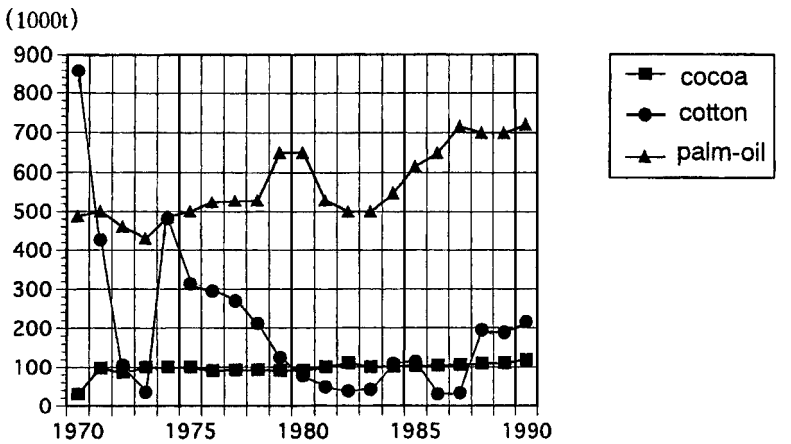


Fig. 7. Production of Major Export Crops.
Sources: Central Bank of Nigeria, *The Impact of SAP on Nigerian Agriculture and Rural Life*, Vol. 1, 1992, Logos, p. 49.

policy had benefited only the urban influential farmers and civil servants, etc., such subsidies were burdens of federal and state expenditure, and the SAP required their cuts. In the first half of the 1980s, the retail prices of fertilizers and pesticides were only 25% and 20% of real prices, respectively. The subsidizing rate for fertilizers, for example, was dropped from 75% to 60% (Central Bank of Nigeria, 1992).

Thirdly, the price controls were abolished. The government abolished MBs that exclusively traded export agricultural goods, while abolishing the low price policy for imported foods. Consequently, not only the producer prices for export crops drastically increased, the dissolution of payment delays due to inefficiencies of the MBs encouraged the production of export crops (Fig. 7).

V. The Effect of the S.A.P. on Food Production

The S.A.P. should have had various direct and indirect effects on food production. A joint report from the Central Bank of Nigeria and the NISER, 'Impact of Structural Adjustment Programme (SAP) on Nigerian Agriculture and Rural Life' analyzed the effects through various changes in the policy fields of trades, markets, foreign exchange, subsidiary, finance, welfare, and wage (Central Bank of Nigeria, 1992: 34-35). Some of effects are given in the book: the S.A.P. affected not only the production of export crops but also that of food crops, directly or indirectly. For direct effects, there were the rises in prices of imported foods and consequent relative lowering of domestic food prices, while the prices of imported agricultural inputs soared combined with cuts in subsidies which made them absolutely unaffordable for peasants. As for the indirect effects, they indicated the hardship of urban life due to increased unemployment and under-employment amidst rising food prices. Thus the living standard of the rural area was more improved in comparison to that of urban areas.

But this does not mean that the life in rural areas has become well off in real terms. Faruquee (1994: 272) shows that real price of export crop based on 1980 has increased 59.4% in the period of 1986-90, but that of food crops is decreased 13.6%. The indexes of real price of major food commodities during the period 1986-90 (based: 1980＝100) are: Maize 77.0, yam 62.4, rice 97.0, cassava (gari) 75.0, sorghum 103.8, and millet 72.4 (Faruquee, 1994: 273). So it is quite viable that only farmers who could produce exportable crops could take advantage of S.A.P. Both food and export crop production has risen since 1986, however, the impact of the S.A.P. was more significantly positive to the export crop production. It was in 1988-89, some of cocoa farmers have benefited by short-lived cocoa boom.

Fig. 8a and 8b show the increase in price of selected food crops in Lagos and Oyo/Ondo State. The former is the State of big city and the latter is the state of rural areas. This shows that there is no much difference in the food price between city areas and rural areas. But in both States, rice shows the highest increase rate as indicated before. The ban of importation of rice will be the main reason for this. This is another impact of S.A.P. on food production.

Fig. 9a and 9b show the Consumer Price Index in both urban and rural areas. In rural areas, the increase rate of "Food" prices is lower than that of "Household goods and other purchase," but that is not so clear in urban area. Increased rate of

"Food" does not show much difference between urban and rural areas, but the rate of "Household goods and other purchases" in rural areas is outstandingly high. This suggests that the people of rural areas were more significantly affected by the increased cost of household goods. Here again they affected different people in different ways.

Thus, the impact of S.A.P. on food production in rural areas , ironically, was bigger than any other agricultural programs or plans implemented in Nigeria since Independence. In the next chapter, the kind of changes that have happened in the food producing area in the 1980s will be discussed.

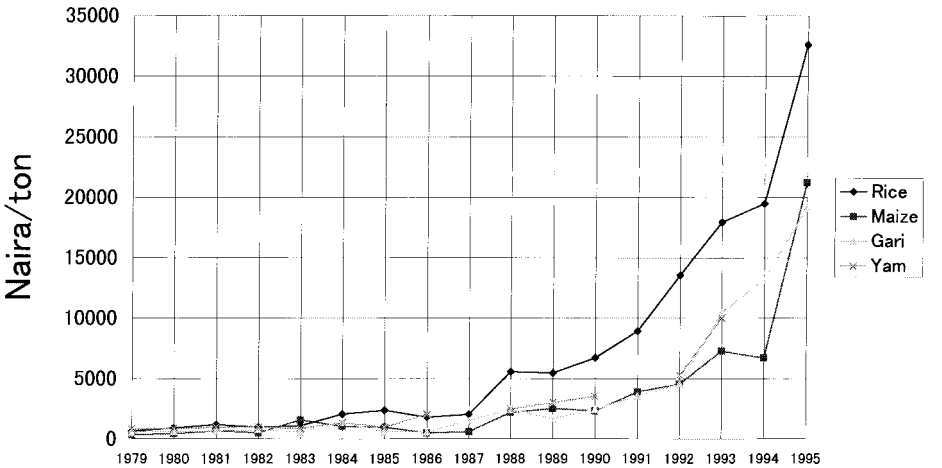


Fig. 8a. Average Farm-Gate Prices of Selected Agricultural Commodities (Lagos).

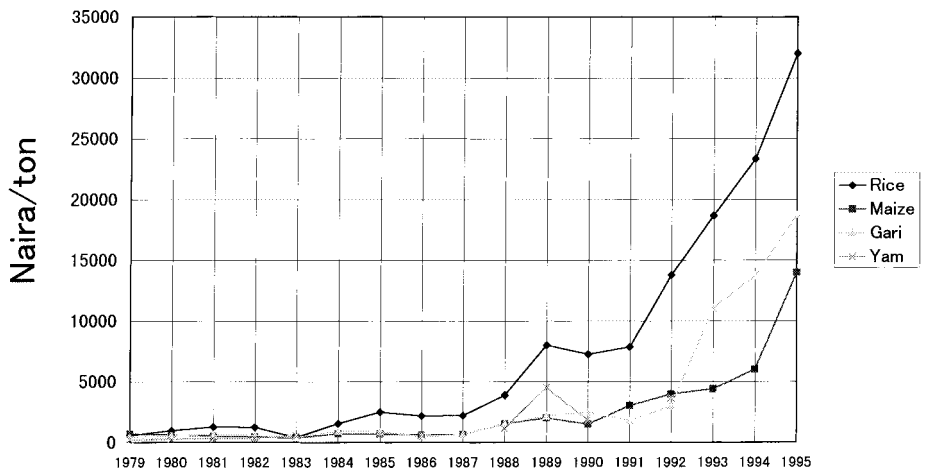


Fig. 8b. Average Farm-Gate Prices of Selected Agricultural Commodities [1979-87: Oyo, 1988-95: Ondo].

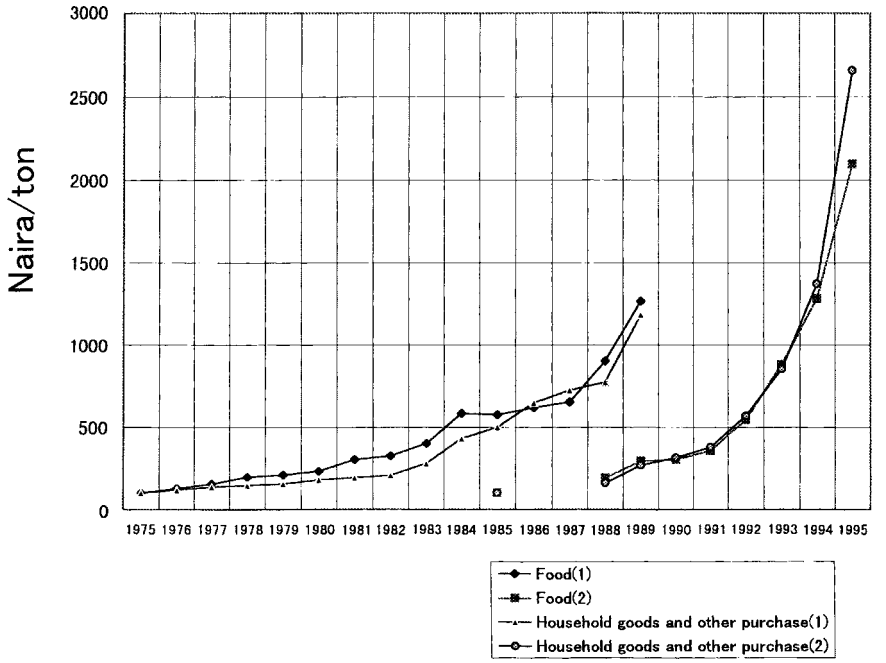


Fig. 9a. Urban Consumer Price Index [(1): 1975＝100, (2): 1985＝100].

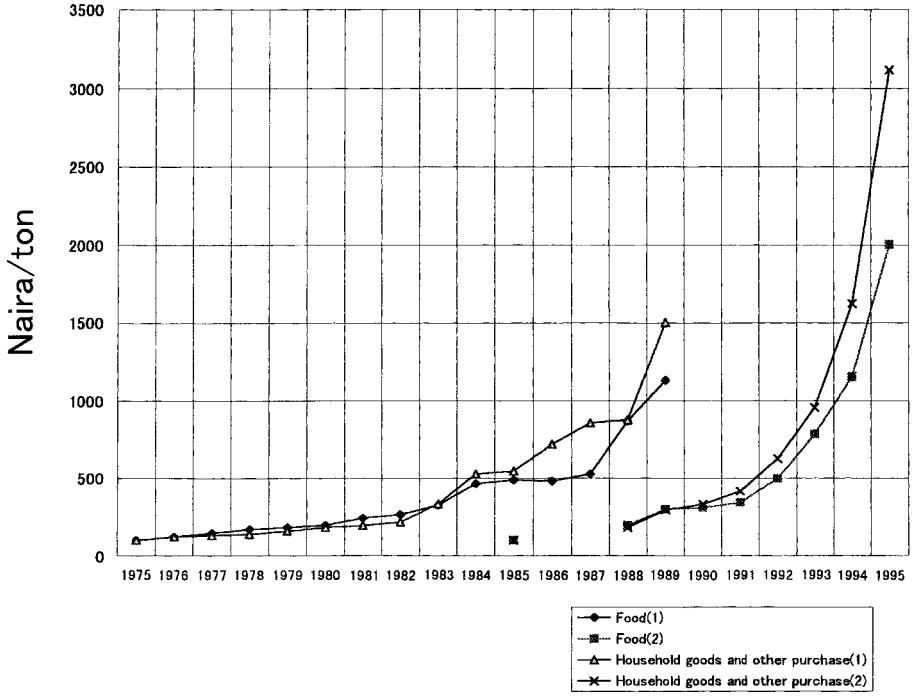


Fig. 9b. Rural Consumer Price Index [(1): 1975＝100, (2): 1985＝100].

FOOD PRODUCTION IN FOOD PRODUCING AREAS; A CASE STUDY OF AN EBIRA VILLAGE

I. The Ebira Land and Study Area

1. *General characteristics of the study area*

The field study was conducted at a village in Ebira land (formerly called as Igbira in English) in 1985, 1989, and 1990. The village was also visited several times in 1995 and 1997.

The Ebira land is in Kogi State, which was established in October 1991. Before that, Ebira land was located at the periphery of the former Kwara State, by about 180km from the state capital, Ilorin. The land is now close to the state capital Lokoja and the town of Ajaokuta, where a bridge over the Niger connects the east

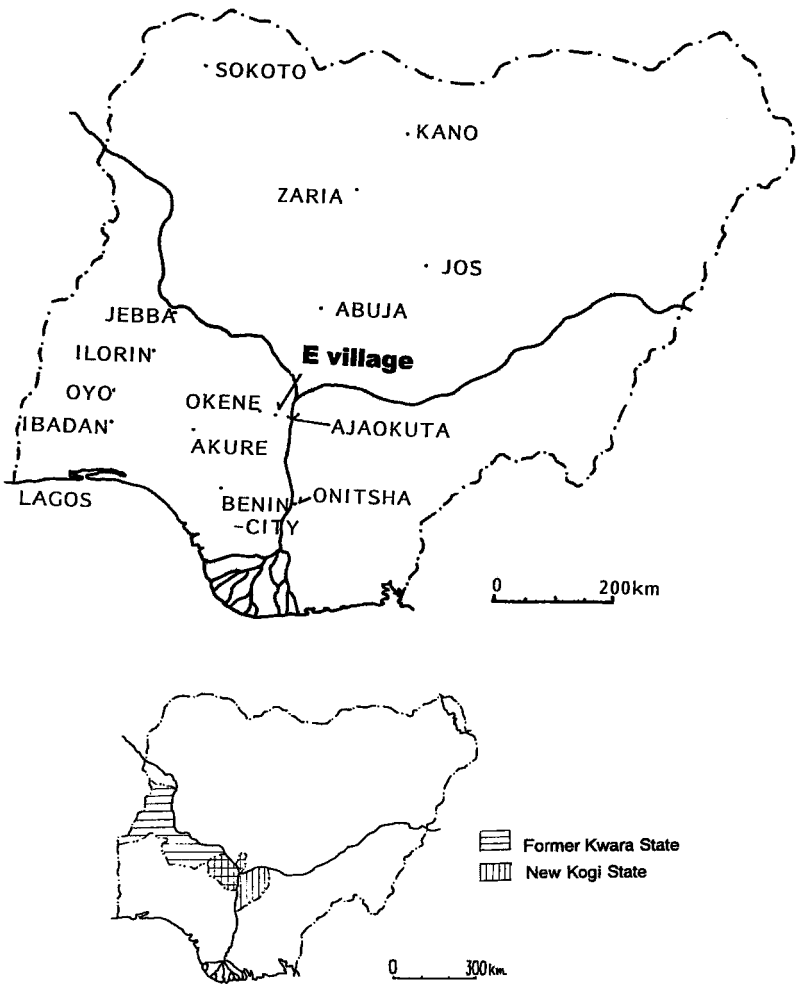


Fig. 10. Location of Study Area.

and west sides of the state (Fig. 10). The road in Okene town, the central town of Ebira land, has been improved remarkably since 1991. This is one visible signal economic development but of the whole Nigeria, Ebira land remains an economically backward region.

Table 1 shows the rate of net migration by states in 1991. It shows the difference in the population between those persons who reported a state as their home-state and those who resided in the state. Kogi State is among the states which have a high rate of out-migration. This tendency is more clearly shown in Table 2. About one fourth of the current married men have left Kogi State, so one fourth of households are headed by women (25.3%), which is much higher than the national average of 15.2%. The mean size of a household in Kogi State was 5.4 persons, slightly over

Table 1. Net Migrant by States in 1991.

Region	State	Net Migrant (%)
Northeast		1.12
	Adamawa	8.84
	Bauchi	0.67
	Borno	2.66
	Jigawa	-4.36
	Kano	-2.49
	Plateau	9.52
	Taraba	3.62
	Yobe	-2.00
Northwest		1.29
	Abuja (FCT)	39.06
	Kaduna	22.28
	Katsina	-6.4
	Kebbi	-1.59
	Kogi	-7.4
	Kwara	-7.89
	Niger	9.76
	Sokoto	-5.65
Southeast		-5.33
	Abia	-6.00
	Akwa Ibom	-21.44
	Anambra	-2.87
	Benue	-2.79
	Cross River	13.05
	Enugu	-6.18
	Imo	-33.94
	Rivers	8.77
Southwest		10.50
	Delta	-6.36
	Edo	2.63
	Lagos	85.00
	Ogun	-7.18
	Ondo	3.46
	Osun	-19.59
	Oyo	5.35

Source: Nigeria, National Population Commission, *1991 Population Census of the Federal Republic of Nigeria: Analytical Report at the National Level*, Abuja, 1998, p. 283.

Table 2. Sex ratio of current married population by State (per cent of men/women).

Lower States	Enugu	74.3
	Kogi	74.4
	Osun	74.7
	Benue	76.1
Average	Nigeria	80.6
Higher States	Anambra	85.3
	Cross River	87.7
	Rivers	92.9
	Lagos	94.5
	Abuja	106.6

Source: Nigeria, National Population Commission, *ibid*, p. 95.

the national average of 4.9 (National Population Commission, 1998: 82, 118, 8283).

All these figures show that the Kogi State remains peripheral in terms of economical development.(11). The State has neither significant export crops nor an industrial center where people can find jobs. The most important activity is agriculture, particularly food production, and a considerable number of people have migrated out of the state.

The S.A.P. has influenced farmers in this area in many ways. The change in prices for food, household goods, transports, and educational fees, has direct impact on farmers life. For the people in this area, however, the impact on the life of migrants is also very influential, because working outside the state as migrants constitutes an indispensable part of their economic activities.

Next, the some of the effects of S.A.P. will be analyzed from two aspects, migration and the farming system.

2. *The Ebira people and the village*

The population of Ebira in the former Kwara State was 467,000 persons in 1970 (Ministry of Economic Development, Kwara State, Nigeria (n.d.) Table 7 & 10), while the total population of the new state of Kogi was 2,147,756 in the 1991 Census (National Population Commission, 1998: 29). The population density of the Ebira area was 141 persons per square kilometer in the 1970 census, while that for all of Kwara State was 46 persons per km^2. Even in the 1991 Census, the population density of Kogi State was 66 persons, the highest among the four states in the west central area (National Population Commission, 1998: 31). This disproportionately high density may have been one of the push factors for seasonal migration of the Ebira people, which has been well known since the early days of the colonial era.

The Ebira Division consisted of two Local Government Areas (LGAs), Okene and Okehi when this field study was conducted in village E, and the village belongs to the latter. As the village is situated where the Okehi LGA sticks out into the Okene LGA, its eastern and southern boundaries touch the Okene LGA. The largest settlement of the Ebira Division is Okene, with an estimated population of 174,654 in 1982 (Afolayan, n.d.: 16).

The village E is located along the four-lane highway which connects Okene and Ajaokuta, where the first iron-steel plant in West Africa was constructed. Being 20km from Okene and 30 km from Ajaokuta, it can be reached in 15 minutes from

Okene and in 30 minutes from the Ajaokuta iron-steel plant using this highway. Most of the houses in the village are located north of the highway, and an unpaved road runs through the center of the village. There are rocky hills west of the village, and arable land lies to the north and north east, and further to the south of the highway. The lands south of the highway hold the greater proportion of arable land.

Of the 64 heads of households of the village interviewed, all but three were Ebira people, the rest being a Yoruba, one Ibo and a person from the North, so this is a village of Ebira people. No investigation on the composition of ethnic groups for the whole village was conducted.

There is one primary school, one secondary school, one church, and one mosque. Around 60% of the villagers are Muslims, 25% being Christian, and the other 15% believe in traditional religion. Most of the houses are one-story built from mud bricks with tin roofs. There is a common well but no piped water and electricity. Some possess small electric generators which can be used for milling machines, television sets, and refrigerators. The milling machines are used to make cassava flour, which is a very important source of cash for the farmers.

The number of house, *irehi*, built in the village is slightly over a hundred, but as many houses are lived by more than two households, the number of households in the village would considerably exceed one-hundred.

3. *The research methodology*

A questionare was administered in 1985 and 1989. Random sampling was not successful because some of the people were not cooperative. The male elders of each household who accepted our questionare study were interviewed. If the male elders were dead, the female elders were interviewed. The number interviewed in both years is nearly the same, but the members interviewed were different.

The term “household” is defined here as a unit of persons who are sharing the same household budget. An extended family can thus be divided into several households. A household usually consists of the eldest male (head of household) and his wife (wives) and their children. In some cases, a three-generation family forms a household. A polygamous family is also considered to form a household. Out of 60 elders interviewed, 23 had only one wife (including cases which recorded death of other wives), and another 37 had more than two wives; 27 had two wives, 8 had three wives, and 2 had four wives. All these families its are regarded as single households.

On the other hand, a widow, or uncle and their children living with the head of the household’s family are treated as members of a different household, because they usually have their own independent budget. There are strong economic ties between heads of households and his uncle or a senior widow but that does not extinguish the independence of the uncle’s or widow’s budget. Most farming families comprise more than two households. It is rather rare that a nuclear family lives alone in a house. This appears mainly in families of school teachers and new migrant families.

Information on the elders themselves, and their wife (wives) and their children was collected. The three main items asked were: ① basic information on members of the household such as name, sex, age, religion, educational experience, and marital status; ② mobility and remittances such as migration experiences, migration

motives, job experience, frequency of remittance, amount of remittances, frequency of returning home, and remittance for education; and ③ socio-economic activities such as land tenure, agricultural production, household expenditure by items, religious activities, and participation in clubs. In case of three-generation families, such information about migration experience and job experience of the third generation was also recorded if they had already started working. The member of households living with a head of the household will be called a "co-resident member of the household," while members absent from the village at the time of the survey for education or seasonal migration will be called "absent members of the household." The information about absent members was also collected on the same level as that of co-resident members.

In this paper, this village will be called "the homeland" for the villagers. Some heads of households were not from this village (8 out of 64 heads of households surveyed, of which 3 were not Ebira people), but this village is regarded as a homeland for their children. For the absent members, the village where their parents live is a focal point that connects the household members.

Because of this definition of a household, this research has left out the inter-relations between different household members within a house. This is one defect of this study, but the inter-relation was supplementary interviewed individually. The co-resident widows and uncles get support from other household's members not only in their farm work but also in food provision. Reciprocally, they help them on occasions such as migration or job seeking.

Thus the existence of inter-familial mutual support beyond the household is quite clear, but there are invisible boundaries between households. For example, of home remittances, monetary transfer is uncommon between members of different households even they live in the same house. There is a clear difference in frequency of cooperation between intra- and inter- household members in an extended family. Even in a polygamous household, the tie between mother and her real children is stronger than that between her and her step children. This is the reason why the author thinks it is valid to take a household as unit of research even in a family in which more than one household live together.

4. *Occupation of the heads of households.*

Since in the course of research, I got an impression that there is a close relation between the occupation of the heads of household and their children, I have analyzed the job experience and migration experience of each member of a household by classifying households. I classified into four groups of households according to occupation of the head; ① teacher and civil servant; ② merchant, paid laborer, and miscellaneous (artisan, small trader, *imam* [Muslim priest], traditional medical doctor [healer, traditional practitioner], etc.); ③ farmer; and ④ retired.[12]

The first group of households receive the largest monetary income and five out of seven households of teachers, and five out of eight households of civil servants owned a car, while only two out of fifteen farm households had a car. The second group follows the first group in cash income, but there is a large gap between merchants/laborers and miscellaneous. The former have an income level close to the first household group, while income level of the latter is equivalent to that of farm

households. There were only two households engaged fully and professionally in trading, and one head of these households had experience in port authority and the other in selling textiles, and both became independent and started trading in this village. There were three paid laborers all working at the Ajaokuta steel plant building site as construction workers and a foreman. They have changed jobs from teacher, civil servant, and cash crop farmer. Miscellaneous occupations includes *imam*, traditional medical doctors who use traditional remedies, a widow trading soap, toilet paper, pencils, etc. along with small farming. Apart from *imam*, the amount of work and income varies from time to time and their income is no much greater than that of retired persons.

The third group, the farm household, can be further divided into two: that of subsistence farmer households and that of cash crop farmer households. Cash crop farmer does not mean specialization to cash cropping, but rather its engagement in cash cropping together with subsistence farmers. In contrast, subsistence farmers do not cultivate cash crops at all and produce only food crops. The monetary income is greater for a cash crop farmer, and of most subsistence farmers dream to be cash crop farmers. The subsistent farmers' households receive the least monetary income.

Finally the fourth group, the retired household, lives by producing their own food supplemented by aid and remittances of their children. The monetary income level of the retired is as low as the miscellaneous group in the second household group, yet the job experiences of the two groups are distinctively different, and which apparently affect the job and migration experience of their household members. This is why these households were classified into two different groups.

There were two unemployed heads of households at the time of the survey in 1985, and they seemed to live a life similar to that of the retired, but since they wanted to be employed and were looking for a job at the time, their households were not included in group four. Hence the two households do not belong to any of the four groups.

II. Change in People's Migration of the Village E.

1. *Labor migration prior to 1969.*

In the study of 1985, the migration history of all members were interviewed. Fig. 11 shows some of the results, which shows peoples migration prior to 1969 by household type. Migration by members from the third households group (farm households) and part of the second households group (artisans and agricultural laborers) had been almost exclusively to and from the northern fringe of the cocoa belt in western Nigeria, showing marked contrast to other groups. Obviously, the migration pattern of this group is related to the development of cocoa production in western Nigeria.

Their reasons for migration prior to 1969 were mainly to work in the cocoa belt as agricultural laborers or to be food producer. They dreamed of finally becoming a cash crop farmers of cocoa. The ideal life-cycle of migrant farmers in the 1940s and 1950s had been to start as agricultural laborers and after gaining villagers' confidence, to become cash crop farmers. However they wanted to go back to their hometown after retiring from farming in the cocoa belt, so their migration was cir-

cular. This is also reflected in Figures 12a, 12b, and 12c, which depict changes in occupation of members of farm and non-farm households. The number of agricultural laborers which had been growing until 1962, declined rapidly thereafter, and instead, cash crop farmers increased rapidly throughout the 1960s. The number of food production farmers had increased until 1955, but it changed little after that until 1970. The persentage of cash crop farmers to migrant farmers in the cocoa belt which had been only 14% (5/37) until 1958, rose to 32% (13/41) in 1965, and to 40% (17/43) in 1968.

In relation to the Ebira's migration to the cocoa belt, Berry has found that at the first stage of cocoa expansion, Yoruba cocoa farmers in western Nigeria invited agricultural laborers and food producers from the surrounding area (Berry, 1975: 66-70, 145-147). Adegboye noted that Ebira people who had good reputations for producing food and would not dare to demand land tenure, had been welcomed to the cocoa belt. Sometimes, cocoa farmers exempt Ebira farmers from collecting *ishaghi*, an initial payment for the use of land, and *isakore*, an annual payment in return for the usufruct right (Adegboye, 1966: 450).

Conventionally, it is common to prohibit migrant farmers to plant tree crops to avoid perpetuation of usufruct, and its possible resultant dispute of land possession, but some Ebira people were allowed to plant their cocoa tree in the cocoa belt. As shown in Figures 13a, 13b, and 13c, the places where Ebira people migrated to were in the least developed north-east part of the cocoa belt. This peripheral part of the cocoa belt was not only the latest to be developed, but also had the least population density in western Nigeria, and there had been abundant land for clearings. Thus the local Yoruba and Edo people had no fear of land shortage by the Ebira's immigration to the area (Berry, 1975: 92-93; Shimada, 1987).

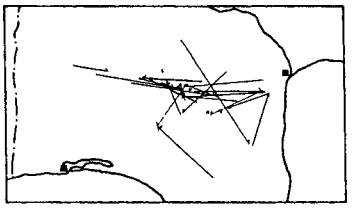
The spatial mobility pattern by members of households of civil servants and school teachers is totally different from that of members of farm households, with its moves concentrating around the former state capital Ilorin (Fig. 11). Comparing job experience of members of civil servant and teacher households and farm households, the former had experiences in paid labor and as drivers prior to 1969, but none in the latter (Fig. 12a and 12b), meaning there was a greater barrier for members from farm households becoming paid labor or drivers in urban areas before 1969.

2. *Labor migration in the 1970s.*

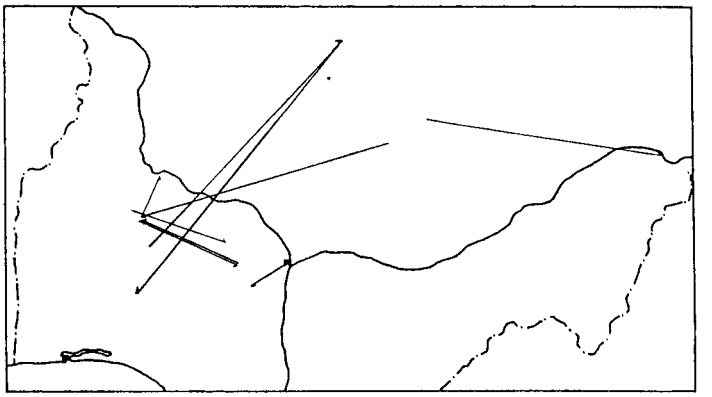
There was change in spatial pattern of labor migration and its accompanying job change in the 1970s. First, on changes in migration pattern, the number of moves of members from farm households to the northern fringe of the cocoa belt declined in the 1970s, and instead, moves within cocoa belt increased. There was an increase in migration of civil servant and teacher household members to and from the state capital Ilorin, and of merchants, *imam* and traditional medical doctor household members to large cities in Yorubaland. These changes are summarized in Fig. 13b, which demonstrates increased migration into Ilorin and Yorubaland.

Second is the change in jobs of each household member. First, for farm household members, there had been significant change in their jobs in the 1970s. There were rapid increases, mainly by youth, into trading, labor and the service sector while migration to Yorubaland as food production farmers increased. There were some

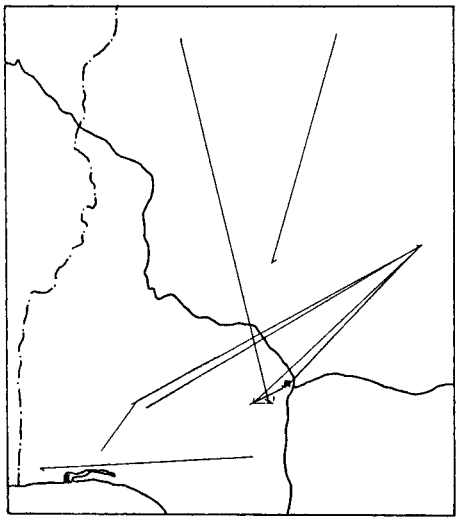
who took apprenticeship for various occupations in urban areas. In contrast, migration to Yorubaland as agricultural laborers have declined. Further, in the late 1970s farm household members became civil servants and teachers.



Household of Farmer



Household of Civil Servant, Teacher



Household of Traders, *Imam*, Traditional Doctor

Fig. 11. Destination of Migration by Household Type before 1969.
Source: S. Shimada (1986), *ibid*., p. 66-67.

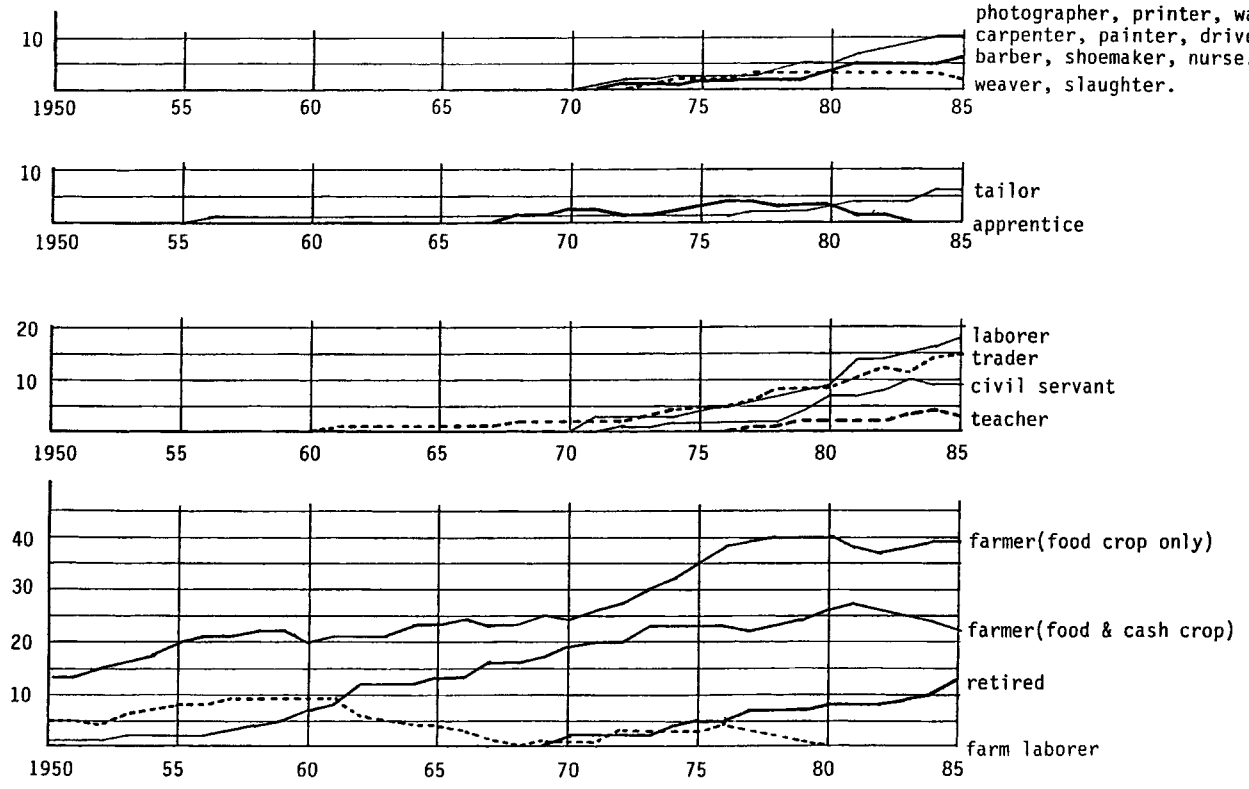


Fig. 12a. Occupational Change of Migrants (Farming Household).
Source: S. Shimada (1989b), *ibid*., p. 37.

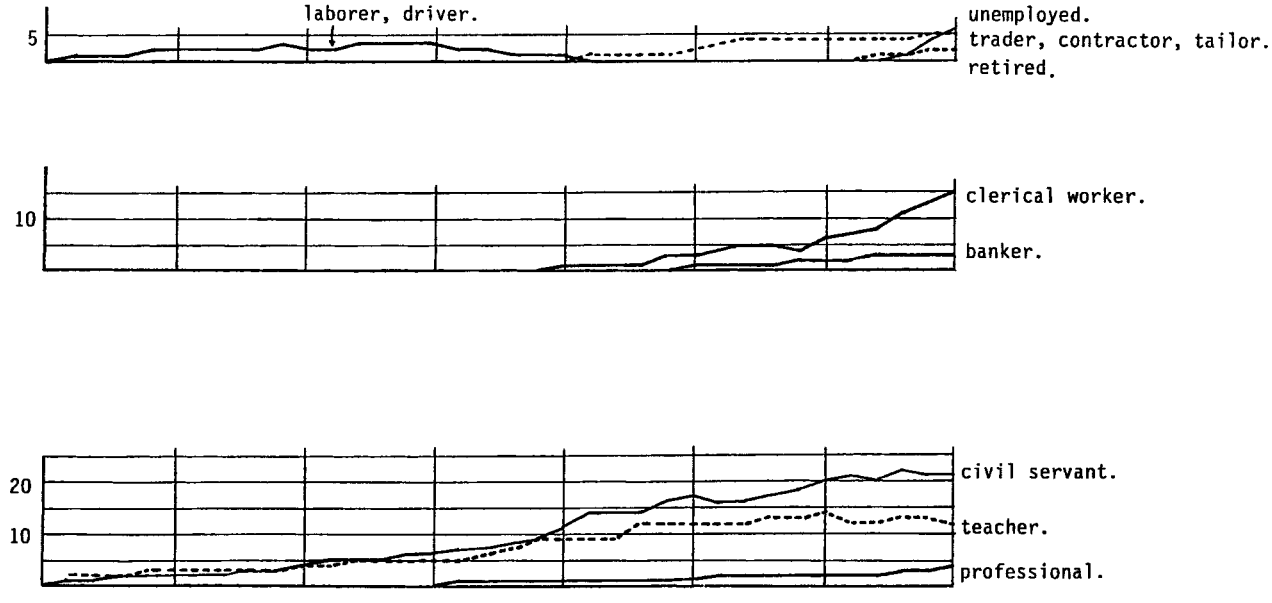


Fig. 12b. Occupational Change of Migrants (Non Farming Household: Civil Servant, Teacher).

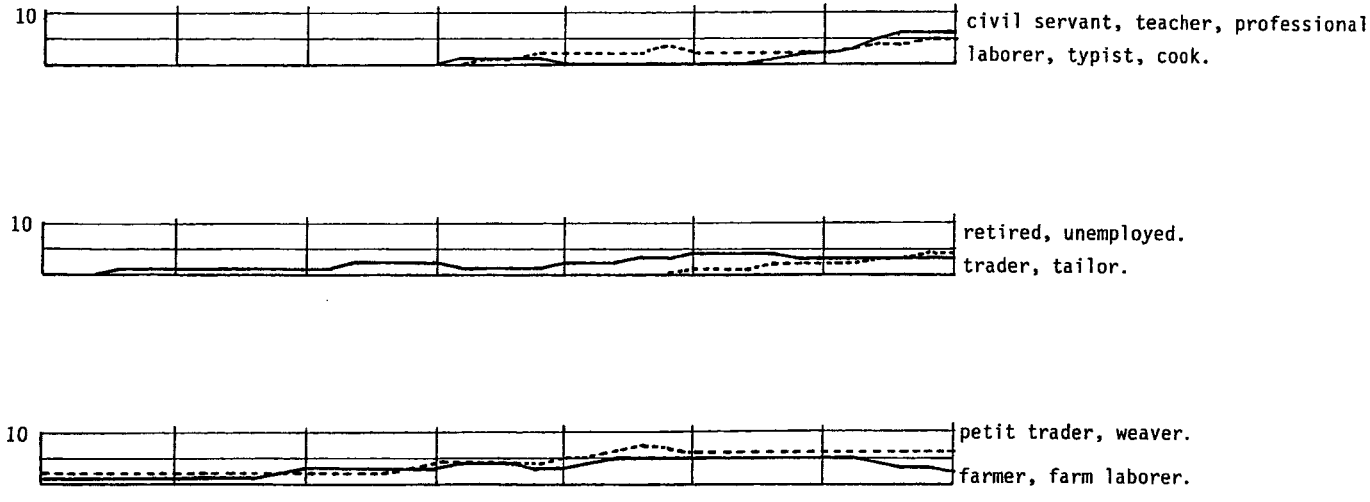


Fig. 12c. Occupational Change of Migrants (Non Farming Household: Merchant, Laborer, *Imam,* Traditional Doctor).

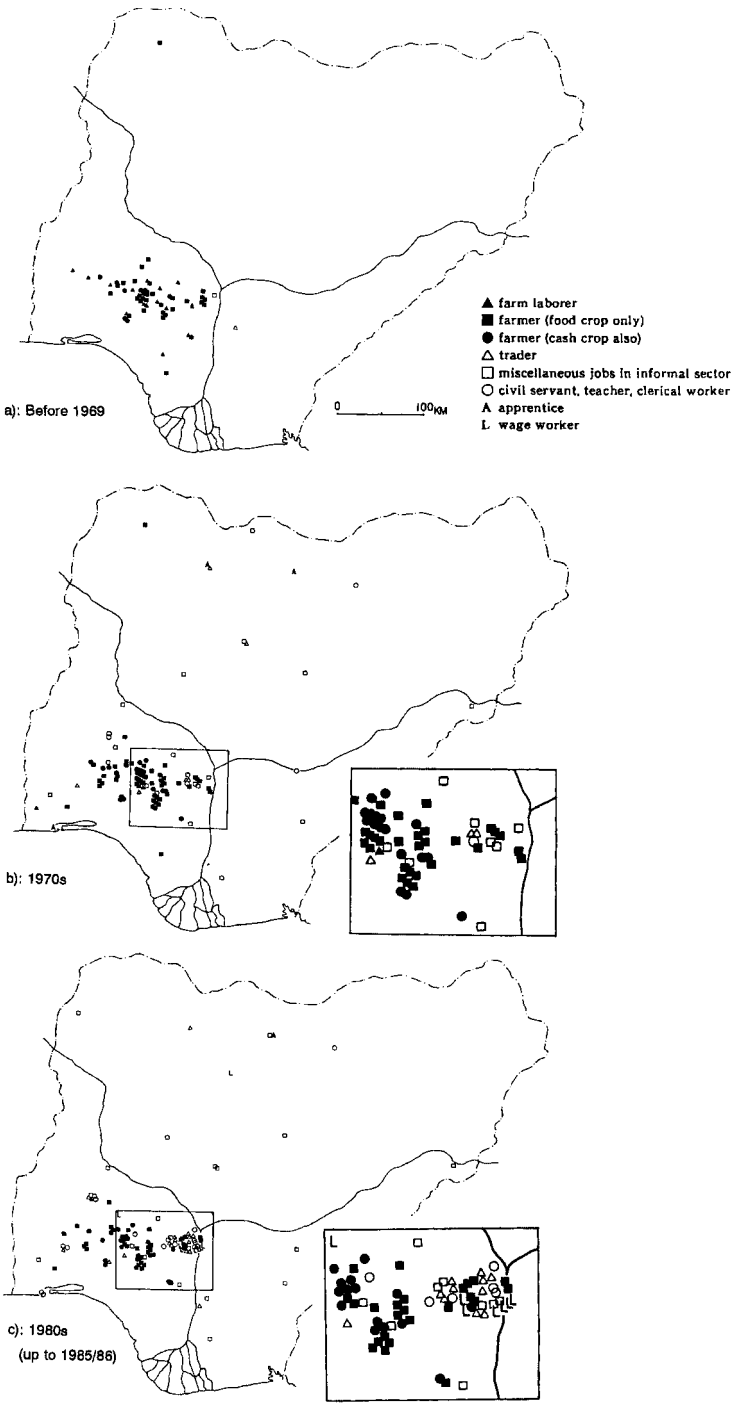


Fig. 13. Change in Spatial Distribution and Occupation of Migrants (Member of Farming Household).
Source: S. Shimada (1991), *Ibid*., pp. 85-87.

From civil servant and teacher household members, there were many who became civil servants and teachers, and this group's involvement into these sectors preceded by 10 years that of farm household members (Fig. 12b). The number of youth who took formal white-collar jobs such as clerical work and bank clerks in urban areas also increased. In contrast, paid laborers and drivers disappeared from this household group, and instead merchants and "contractors" increased. "Contractors" here are people who undertake various construction works or sometimes transport and sell export goods, and these are occupations which saw rapid expansion in the oil boom era. Large-scale contractors may pursue joint venture with multinational enterprises, or contract for Federal or State Government's projects, but contractors in this village were mainly small scale construction firms which undertook jobs at the lowest end of the contractor hierarchy.

The oil boom rapidly increased public expenditure and a construction boom started everywhere. Most of the construction work was contracted to multinational firms and local large firms had joint contracts with them. The importance of information and licensing authorization power that government possesed increased its weight as public employment and projects expanded. Having civil servant among household members became an advantage to be employed or to get a contract. There were criticisms among contractors that public contracts were too arbitrary. Nevertheless, this seems to be the reason why many from civil servant and teacher household became white-collar workers and contractors, at times when youth from farm households barely started to engage in miscellaneous urban occupations.

There were no large employment changes in members from merchant, laborer, Islamic teacher (*imam*) and traditional doctor households during the 1970s. There had been slight growth in the number of people who became small traders, merchants and tailors (Fig. 12c). The change occurred somewhat in the late 1970s, by the increase of civil servants, teachers, and professionals; a trend similar to farm household members but different for civil servant/teacher household members.

The effect of employment expansion due to the oil boom affected people of E village in three ways; ① through construction boom as a direct effect of the oil boom; ② through expansion of public sector employment as a result of the increase in government revenue; and ③ through expansion of the urban informal sector as an indirect effect of the former two. The first and second of these affected mostly civil servant and teacher household members, but only later in the 1970s the other household members. The third effect of the oil boom was associated with the migration to urban areas of members from farm households and merchant, paid labor, clerical work, and indigenous doctor households.

3. *Labor migration in the first half of the 1980s.*

During the first half of the 1980s, the trends that had appeared in 1970s had increased. First, on the characteristics of spatial mobility, migration to the northern fringe of the cocoa belt declined, while migration to metropolitan areas increased for farm household members, and their range of spatial mobility widened. In contrast, moves by civil servant and teacher household members concentrated on flows between the state capital Ilorin and Okene near Ebiya village (Fig. 13c). The spatial expansion of the mobility of farm household members reflects the diversification of

occupation of this group after the late 1970s, while spatial construction of mobility of civil servant and teacher household members is linked to the increased importance of the Kwara state capital (Ilorin) as a regional center.

The increase in importance of the state capital Ilorin as regional pole needs to be discussed further. During the 1970s in Nigeria, a quarter of the federal budget was allocated to 19 state governments which were designated just before the Biafran war. The amount soared as government oil-related revenue increased. The local government expenditures had increased strikingly to around 21 times, from 182 million Naira in 1920 to 3760 million Naira in 1980. In addition in 1980, the share of transfer to local governments was raised and fixed by law at 34.5% of federal expenditure, and the public expenditure of state governments further increased to 5613 million Naira in 1981 (Shimada, 1987: 174-175). These rapid increases of state budgets under the oil boom fueled the development of the state capital and influenced significantly the mobility of civil servant and teacher households. As a result of the general election of 1979 and the restoration of democracy after 13 years, the autonomy of state governments tended to increase, and in some states, the tendency of indigenous people to be given priority in public sector employment and promotion had strengthened. This was called "statism" (Shimada, 1987: 179), and so the spatial construction of mobility of civil servant and teacher household members is related to increased public expenditure and intensification of competition for employment within the state.

Next, change in employment will be analyzed using a survey of 1985. In the 1985 survey, there were the following changes in employment of farm household members. First, the members engaging in trade, paid labor and in various jobs in the informal sector rapidly increased, while people becoming civil servants or teachers gradually increased. In contrast, members becoming agricultural laborers or taking apprenticeship declined to zero. The decline in the number of agricultural laborers was a trend since the 1960s, and confirms the trend of youth labor away from the agricultural sector in general, but the reason for the rapid decline in apprenticeship in the 1980s must be explored further.

Apprenticeship in Nigeria in general takes the form of a master providing food and shelter with no pay. According to a survey in west Nigeria, 46% of youths in rural industry and the service sector under apprenticeship were not paid, and only half of workers had been paid (Aluko, 1973). Youths enter apprenticeships to acquire skills within a certain period of time, but in reality, they work at various chores, and are used as cheap labor. At times when there is much works to do, masters pay in kind to keep them from leaving, but usually they are not paid. The decrease of youth labor willing to work under these conditions, and the difficulty for masters to keep apprentice led to a decline and then the extinction of the apprentice system in the 1980s.

The number of people employed in clerical works from civil servant and teacher households increased, but the number of people employed as civil servants, teachers, bank clerks or professionals remained largely constant. Compared to that, the emergence and rapid increase of unemployment is worth noting (Fig. 12b). This is obviously a reflection of the economic downswing of the late 1970s. The growth of formal employment (three-fifths of which is in the public sector), which had been

Table 3. Number Employed and Discharges in Nigeria.

	Metalli-ferous minning	The Nigerian Coal Corporation	The Nigerian Railway Corporation	Manufactur-ing industry	Building and construction industry	Federal civil service	Discharges from civil service
1978				305,495			
1979							
1980				453,632			
1981	33,217	3,106		449,093			
1982	31,323	3,152	39,127	329,704		265,478	2,433
1983	27,821	3,040	37,068	322,396		292,123	2,361
1984	18,202	2,153	34,997	311,713	59,167	201,840	6,294
1985	10,876	1,736	35,522		30,112	255,306	1,893
1986	3,165	1,674	34,269			255,069	533

Source: Federal Republic of Nigeria, *Annual Abstruct of Statistics, 1988*, Lagos, Federal Office of Statistics, 1988, pp. 99-106.

increasing steadily during the 1970s, stagnated during the 1980s (Table 3). Unfortunately during this period, universities and polytechnic institutes established in the 1970s produced graduates in far greater numbers than planned in the Third Development Plan. These educated youths mostly from civil servant and teacher households preferred to stay unemployed and seek jobs until agreeable employment could be found, rather than to engage in miscellaneous urban jobs, as members from farm households did. Hence full-unemployment emerged. It was possible for civil servant and teacher households to keep and to support these unemployed youth.

4. *Labor migration in the latter half of the 1980s, after S.A.P.*

The author conducted an additional study in 1989 using the same questionnaire, but as for migration history, only those persons in the 1980s were interviewed. Tables 4 to 6 summarize the 1989 survey on change at employment. This shows changes in employment in the latter half of the 1980s. First, for the employment of the members of farm households, growth of employment in the formal sector stopped in the latter half of the 1980s and instead, employment in informal jobs such as weavers, artisans, traditional medical doctors, blacksmiths, carpenters, barbers and shoemakers increased. It is note worthy that apprentice who had disappeared at the beginning of the 1980s re-appeared in the latter half of the 1980s.

Table 6 shows changes in employment of members of civil servant and teacher, merchant, laborer and driver households. Caution is needed when comparing this table to the migration pattern up to 1985 of civil servant and teacher household members, but some changes peculiar to the late 1980s can be pointed out. First, the number of people taking apprenticeships increased in the mid-1980s; and second, the numbers of blacksmiths, carpenters, barbers, shoemakers, tailors, paid labors, printers, and mechanics also increased in the latter half of the 1980s; while third, the number of civil servants and teachers remained constant. However, from this household group, there was no increase in employment for weavers, artisans and traditional medical doctors, although it did in increase for farming household members.

There were no unemployed among civil servant/teacher, merchant, paid labor and driver household members at the time of the survey, but it is not certain whether

Table 4. Occupational Change of Farming Household's Member.

Year	1979	80	81	82	83	84	85	86	87	88	89
Farming (incl. farm laborer)	21	23	23	26	26	26	29	29	29	28	28
Weaver, craft-maker, healer	3	5	6	7	8	7	8	8	9	11	11
Small trader	2	2	2	1	1	1	0	0	0	0	0
Apprentice	0	0	0	1	1	1	1	1	1	2	2
Smith, carpenter, barber	1	0	1	1	1	1	1	1	2	2	2
Tailor	2	2	2	2	3	3	3	3	3	3	3
Driver	0	0	0	0	0	0	0	0	0	0	0
Laborer, printer, mechanic	0	0	0	0	3	3	4	5	5	5	5
Trader, contractor	1	0	0	1	1	2	2	2	3	3	4
Clerical worker	1	1	1	1	2	3	4	4	4	4	4
Teacher	3	3	4	4	6	7	8	6	6	6	6
Civil servant	1	1	1	2	2	2	3	5	6	7	7
Retired person	0	0	0	0	0	0	0	0	1	3	3

(1); Type of household is classified here according to occupation of house-head.
Source: S. Shimada (1991), *Ibid*., p. 88.

Table 5. Occupational Change of Non-Farming Household's Member.
(in Informal Sector: Healer, Weaver, Small Trader, Smith, Carpenter, Tailor)

Year	1979	80	81	82	83	84	85	86	87	88	89
Farming (incl. farm laborer)	6	7	8	8	8	8	8	8	8	8	8
Weaver, craft-maker, healer	4	4	5	5	5	5	5	5	4	4	4
Small trader	1	1	1	1	1	1	1	1	2	2	2
Apprentice	0	0	0	0	0	0	0	0	0	0	0
Smith, carpenter, shoemaker, barber	1	1	1	2	2	2	2	2	2	2	2
Tailor	0	0	1	1	1	1	1	1	1	1	1
Driver	2	3	3	3	3	3	3	4	4	4	3
Laborer, printer, mechanic	1	1	1	1	1	2	2	2	2	2	2
Trader, contractor	3	3	3	3	4	4	4	4	4	4	4
Clerical worker	0	0	0	0	0	0	2	2	2	2	2
Teacher	1	1	2	2	3	3	3	4	4	6	6
Civil servant	2	3	3	3	4	4	6	7	8	8	8
Retired person	0	0	0	0	0	0	0	0	0	0	0

Source: S. Shimada (1991), *Ibid*., p. 89.

Table 6. Occupational Change of Non-Farming Household's Member.
(in Informal Sector: Laborer, Driver, Trader, Civil Servant, Teacher)

Year	1979	80	81	82	83	84	85	86	87	88	89
Farming (incl. farm laborer)	0	0	0	0	0	0	0	0	0	0	0
Weaver, craft-maker, healer	3	3	3	2	3	3	2	2	3	3	2
Small trader	0	0	0	1	1	1	1	2	2	1	1
Apprentice	1	1	1	2	4	4	4	3	3	2	1
Smith, carpenter, shoemaker, barber	0	0	0	1	1	1	1	2	3	3	3
Tailor	2	2	2	2	2	2	3	4	4	4	5
Driver	4	4	4	4	4	4	4	4	6	7	7
Laborer, printer, mechanic	1	1	2	2	2	3	3	4	4	4	6
Trader, contractor	4	4	4	4	3	4	4	4	4	5	5
Clerical worker	0	1	1	2	2	1	1	2	2	2	2
Teacher	2	2	2	1	2	2	2	3	3	3	3
Civil servant	3	4	4	5	7	7	7	7	7	7	7
Retired person	0	0	0	1	1	1	2	2	2	3	3

Source: S. Shimada (1991), *Ibid*., p. 89.

there had been unemployment in the beginning of the 1980s. Because in the 1989 survey, the author asked about past education and job experience but not directly about unemployment experience. However, if we regard a blank period after finishing education and before being employed as a jobsearching period, there certainly had been unemployment among such household members in the mid-1980s, but by the late 1980s, they took various jobs as mentioned above. It seems that this household group also became less able to support the unemployed in the latter half of the 1980s, and induced them to take any kind of job including jobs in the informal sector.

Table 5 shows the changes in employment of members of households in which the head's occupation was traditional medical doctor, weaver, small trader, blacksmith, carpenter or tailor. Throughout the 1980s, numbers employed as civil servants, teachers, and clerks increased, while other occupations changed little. Although the increase of employment in formal jobs of these household group members may seem contradictory to the trend of civil servant/teacher household members (employment into formal jobs was stagnant), it is possible to interpret this as follows, regarding the relative decline in pay level and frequent pay delay of civil servants and teachers during the latter half of the 1980s. Members of civil servant and teacher households, during the economic downturn preferred to engage in better paid jobs as drivers, paid laborers, printers, mechanics carpenters, barbers, and shoemakers, while youth from the households already engaged as these occupations started to take jobs in civil servants and school teachers which had formerly been difficult for them to enter. By then school teaching as an occupation had lost its attractiveness compared to in the 1970s, as is exemplified by recollecting that the expatriation of foreigners occurred in January 1983 by the Shagari Administration and in May 1985 by the Babangida Military Goverment.[13] The expatriation of foreigners revealed that many Ghanaians had been school teachers in the 1980s as replacements of Nigerians.

III. Transition in Farm Management in Village E.

In this section, the way how labor migration reported in the preceding section affected agriculture in village E in terms of farm management will be examined. This village is situated in a region called the “Middle Belt”, and in the climatic zone of the Southern Guinea Savannah. Annual rainfall is around 1200 mm. This region is a border region, when classified by agricultural region often used in West Africa divided into cereal and root crops areas, where both cereals and root crops are grown. Agboola reports the percentage of crops raised in this region: yam and sorghum (10-29%); cassava (5-9%); and corn (under 9%) (Agboola, 1979: 56, 59, 79, 86). Needless to say, this is not equivalent to the percentage of cropped area, as will be noted below. Nevertheless, it is true that various crops are grown in this region. Also the absence of cash crops such as cocoa and groundnuts is another characteristic of agriculture in this region. This is relatied to the circular migration to and from the cocoa belt before 1969, as reported above.

1. *Crops raised*

There is no suitable cash crop for export in this village, yet some are raised for

local markets. It is possible to classify crops into three groups by the ratio of consumption to sale (Table 7). First is the group in which consumption exceed sales, yam, pepe (chili pepper), maize, cassava, and cocoyam (Ajiki & Shimada, 1990: 15-16). Second is the group of crops for which sales exceed consumption, such as cowpeas, sorghums, groundnuts, and melons. The final group includes crops that are raised mainly for sales and only castor beans qualify for this group. This does not mean that caster beans are the main cash crop of the village, since only about 20% of farms raise this crop.

Most crops are sold in the market held every three days in the village, but some are sold directly to the trader in the village. The trader owns a car and drives to

Table 7. Importance of House Consumption by Crops.

House Hold	Cassava	Yam	Cocoyam	Water Yam	Maize	Cowpea	Sorghum	Ground Nut	Benissed	Melon	Okra	Pepe	Garden Egg	Green Vegetable	Cashew Nut	Bitter Leaf	Pawpaw	Caslor Bean
1	HS	HS			HS	HS	HS	HS	HS	HS	HS				HS			
2	HS	HS			H S		HS	HS		HS		HS		HS	HS			
3	HS	HS	HS		HS			HS		HS				HS	HS			
4	HS	HS			HS	HS		HS		HS	HS	HS		HS				S
5	HS	HS	HS		HS		HS			HS								
6	HS	HS					HS	HS										S
7	HS	HS			H									H				
8	HS	HS			HS		HS	HS		HS		HS		HS				S
9	HS	HS	H			HS		HS		HS	HS	H					H	
10	HS	HS		HS	HS				HS	HS	HS	HS						
11	HS	HS			HS	HS				HS	HS	H		H				
12	HS	HS		HS		HS	HS			HS	H	H						
13	HS	HS	HS		HS	HS	HS			HS		HS				HS		S
14	HS	HS			HS			HS	HS			HS		HS				S
15	HS	HS			HS		HS		HS				HS					
16	HS	HS	H	H		HS				HS		H		H				
17	H	HS		H	HS							H		HS				
18	HS	HS			HS		HS			S							H	
19	HS	HS				S	HS	HS		HS	HS	H	HS	HS				
20	HS	HS	HS				HS	HS		HS		H		HS			H	S
21	HS	HS			HS	HS	HS	HS		HS			S					
22	HS	HS			HS	HS	HS			HS	HS	H		H				
23	HS	HS			HS	HS	HS	HS	HS	HS		HS						
24	HS	HS	HS	HS	HS	HS				HS		H S		HS				
25	HS	HS				HS				HS	HS	H		HS				
26	HS	HS			HS					HS		HS		HS				
27		H						HS	H					HS				
28	HS	H			H					H								
29	HS	HS	HS			HS			HS	HS		HS		HS				S
30	HS	HS			HS					HS	HS			HS				
31	HS	HS								HS		HS		HS				
32	HS	HS	HS		HS		HS					HS		HS				
33	HS	HS	H	H	H					HS		H		HS			H	
34	HS	HS				HS	HS	HS		HS	HS	H S				HS		
35	HS	HS			HS					HS		HS		HS				
36	HS	HS				HS	HS	HS		HS	HS			HS				S
37	HS	HS			HS	HS				HS	HS	H						
38	HS	HS			HS		HS			HS	HS	HS						
39	HS	HS	HS	HS	HS		HS	HS	HS	HS		HS						
40	HS	HS			HS					HS		HS						

H: Very Important for House-Consumption S: Very Important for Sell
H: Less Important for House-Consumption S: Less Important for Sell
Source: K. Ajiki & S. Shimada (1990), *Ibid*., p. 16.

Okene to sell the crops. The ratios of consumption to sale for each crop are as mentioned above, but for amount sold, maize and cassava are the most important crop. The villagers bring their crops to the village market when they want to buy daily needs such as soap, detergent, matches, medicine, and cosmetics or cash for education, etc.

The village market function as a place for exchange of daily necessities with agricultural products. The farmers said that sale prices in the village market are too low to encourage them produce more marketable crops. It is more stable and easy for them to migrate for work than to raise cash crops. A high consumption rate, a high variety of crops, and under-development of cash crops are all closely linked. The potential for expansion of cash earnings via agricultural production did not exist in this village. This is not exclusive to this village E, but is general to the Ebira region. This is the reason why preference for paid labor among Ebira youth was so strong even in the recession of the 1980s

2. *Farm labor: gender division of labor and youth labor*

To collect detail data on labor input on farming, intensive interviews combined with farm measurement were conducted in 1989 and 1990 in two households. The analysis below is based on the study and the result of the questionnaire.

i) Gender division of labor and employed labor

There is gender division of labor in farm work. Table 8 is a summary of the 1989 questionnaire results.

Farm work done mainly by men is land arrangement (clearing, slash and burn, removing obstacles, etc.), planting of cassava and yams, and bird scaring; and those by women are planting of maize, cowpeas, groundnuts, melons, okra, pepe, and vegetables. Women also harvest although men often help women planting crops. However, women rarely participate in planting cassava and yams. Since these two crops are the major staples, this suggests that the gender division of labor is maintained strictly for staples, but less so for other crops.

Agricultural paid labor is most frequently used in the hard work of land arrangement. Over 80% of farm households employ agricultural labor for land arrangement. The use of agricultural labor in such basic work suggests that agricultural paid labor is prerequisite for agriculture in this village. Moreover, on 35% of the farms, agricultural labor is the most important agent of the farm work. In contrast with this is the contraction of the traditional mutual support institution called *otu-opa*.[14] At the time of the survey, only 25% of the farms relied on *otu-opa*. Paid labor was used even for weeding, and the communal support system had fallen to a marginal role.

Why is paid labor often used in work for men but not in work for women? One reason may be that male labor is on shortage due to circular migration, and the workforce for hard work suitable to men cannot be joined by women. However, the outflow of male labor cannot be the direct cause of the use of agricultural paid labor in this village. One reason may be a reflection of the gender inequality. Children also work in fetching water, bird hunting, carrying the harvest and other various jobs. They help their parents very much also in the fields, and the reasons for this follow.

Table 8. Main Source of Farming Labor by Works.

House Hold	Cleaning	Buming	Planting										Bird Scaning	Weeding	Harvest
			Cassava	Yam	Maize	Cowpea	Sorghum	Ground Nut	Melon	Okara	Pepe	Green Vegetable			
1	L M	M	M	M	F M	F M	F M	F M	F M	F M				L M	FMS
2	MSL	FMS	M	M	FSM		FSM	FMS	FSM		MFS	FMS	S M	MSL	FSM
3	MSL	M S	MS	M	SFM			MSF	SFM			SFM	S M	MSL	FSML
4	MLS	SMF	ML	ML	FSM	FSM		MSF	FSM	FSM	FSM	F S	S	MSL	FSM
5	ML	MF	M	M	F M		F M		F M				M	ML	F M
6	MLS	M	M	M			F M							ML	F M
7	L M	M	ML	M	MF									L M	MLF
8	SLM	M S	M	M	F M		F M	F M	M F		F M	F M	MS	MSL	FMS
9	ML	MF	M	M		F M		F M	F M	F M	F M			M L	F M
10	MJS	S M	M	M	M S				M S	M S	MS		M	MSL	FSM
11	L M	S M	MS	MS	MSF	MSF			MFS	MFS	FMS	MFS	S M	MSL	FSM
12	MLS	M	M	M	F M		F M		F M	M	M		M	MLS	F M
13	MJL	MF	M	M	F M	F M	F M		F M		F M		M	M J	F M
14	M J	M	M	M	MF			MF			MF	MF		ML	F M
15	ML	M	M	M	M		M L							ML	M L
16	M L	M	M	M	F M	F M			F M		F M		M	ML	MF
17	L M	F M	M	M	F M						F M	F M		L M	F M
18	SML	S M	M S	M S	MFS				MFS	M S			S M	S M	SFML
19	MJ	M	M	M		MF	MF	MF	MF	MF	MF	MF		MJL	MF
20	M L	M	M	M			F M	F M	F M		F M	MF	S M	MSL	FSM
21	L M	M	M	M	M	M	M	M	M					ML	M L
22	ML	M	M	M	F M	F M	MF		MF	F M	F M	F M		ML	F M
23	LMS	MS	L M	L M	MF	MF	MF	F M	MFS		F M			LMS	FMSL
24	LM	M	M	M	F M	F M			F M		F M	F M	M	ML	F M
25	LMS	M F	L M	LMS		F M			F M	F M	F M			LMS	FML
26	LMS	MF	M	M	F M				F M		F M	F M		ML	F M
27	LMS	M		M				F M				F M		LMS	FMS
28	F S	F S	F	F	F				F				S F	LFS	F S
29	L M	F M	M	M	F M	F M			F M		F M			ML	F M
30	ML	M	M		MF				MF	MF			M	ML	MFL
31	L	F	L	L					F		F	F		L S	S F
32	MJS	MS	M S	M	M S		M S				M	M	M	MLS	MLS
33	L M	M	M	M	F M				F M		M F	M		L M	F M
34	MJ	M	M	M		F M	F M	F M	F M	F M	F M		M	ML	F M
35	MJL	M	M	M	F M				F M		F M	F M		M	F M
36	MJ	MF	M	M		F M	F M	F M	F M	F M		M	MF	MLJ	F M
37	L M	M	MF	M	MF	MF			F M	F M	F M			L M	F M
38	ML	M	M	M	MF		MF		F M	F M	F M		M	ML	F M
39	MLJ	MF	M	M	F M		F M	F M	F M		F M			MJL	F M
40	MLJ	S M	M	M	F M				F M		F M			MSJL	FSM

M: House Head (Men) F: Wife and Women Househead S: Children
L: Paid Labor J: *otu-opa* (Mutual Help)
Large Letter: Very Important Labor
Small Letter: Less Important Labor
Source: K. Ajiki & S. Shimada (1990), *Ibid*., p. 18.

ii) Youth labor

In farm households, all household members from children to the aged have a role in farm tasks. Boys eight to nine years old are given their own fields, although the field are often smaller than one a. (are) and they are poorly managed. The harvest from these field is not substantial in the household's total food production, yet they are acknowledged by everyone and the boys are proud to manage them[15]. As boys grow and become of age, they gather seed yams and seeds as possible, and expand their fields within the territory where their father has usufruct right.

Youths prior to independence expand their fields in the following way. First of all, youths need to be approved by their fathers as independent able-bodied men. A man is considerd independent when he is able to work sufficiently in the fields of his father. If he is able to work on more land in addition to his father's fields, he will be eligible to apply for a share of the village's usufruct right. Usually, a son receives usufruct right on the lands that are allocated to his father, but when there is no adequate land in his father's land, the father may apply for additional usufruct right to one of the chiefs of the land holding clan. In this case, obtaining the usufruct right would be rather difficult.

There are two problems that youths face in expanding their fields. One is the way to get seed yams and other seeds for new fields. A youth may receive seeds and seed yams from his father, but if this is not sufficient, he may receive seeds and seed yams, or even cassava plants, as a reward for agricultural labor. Youths may work within the village for this reason, but in some cases, they may travel to work to other regions where valuable plants are grown. Many travel to work on the farms of their relatives in the cocoa belt, and they often bring back seeds, seed yams and cassava plants with them. Transfer of seeds and seed yams from such distant regions also have an important role in the transmission of new breed. Hence transmission of new breed by youths is connected with the institutional way of expanding the field.(16)

The other problem is planting. Normally, youth are supposed to work in their father's (or the household's) field before noon and they can only work in their own fields in the afternoon. In other words, their labor should first be used in their father's fields, and only their extra work is approved to be used in their own field. Hence the difference in size of youths fields across household and within households arises because of the relationship between the father and the son, and the difference in the individual ability of the youths.

The terms “father's” or “son's field” does not mean that they possess absolute or exclusive usufruct right over the field, but rather that they have priority in its management. When wives want to pick yams or cassava from their husbands’ fields, they do not have to get permission each time and the same is true with regard to the son's field. Yet, this does not mean that priority right over fields are fictitious. Instead priority rights are well acknowledged. It is recognized that food for consumption from the household’s fields should be taken within the recognizable range of the member in charge, and beyond that is regarded as a sin. Parents cannot harvest large sums of crops from their children's fields without permission, and wives cannot take crops to sell from their husbands' field.

There is some robbery of crops from the fields. The villagers believe that nomads who go across grassland and fallow field steal the crops, but it seems that there are other thieves. Among the youths, some use juju made by the traditional sorcerer and hang them on top of the pole put up in their field to prevent theft(17). This also has an effect of reminding the family member of their priority in its management.

Youths expand their field by overcoming these two problems. This way of expanding fields may seem contradictory to the increasing reliance on agricultural paid labor reported in the first sub-section; e.g. if they have extra energy to expand their field, why do they rely on agricultural employees? It seems that the youths do not necessarily devote their full time to farming but they rely on employed labor for

insufficient labor.

3. *Cultivation*

The cultivation system of two farms were surveyed successively from 1988 to 1991. Figures 14 and 15 depict the fields of farm household (A) and (B), and the crops planted on each plot. It was a difficult task to draw the boundary of the plots on which cassava is planted, since the boundary between a fallow plot and a cassava plot are transitory when cassava fields return to fallow. Also, in a cassava field at harvest time, the planting may coincide with harvesting. In this case, it is impossible to distinguish between a cassava field on harvest and one immediately after planting. Hence there are some boundaries that are ambiguous in the figure. These ambiguous periods for each plot are made explicit in the cropping patterns (Fig. 16 and 17).

The figures 16 and 17 depict the crop planted in each plot of the fields of the two farms. The plot numbers refer to the numbers given to each plot in Figures 14 and 15. In these tables, the transition from cassava fields to fallow fields, and the coincidence of cassava harvest and planting, are shown using slash line the (///) and arrows (>>>), respectively.

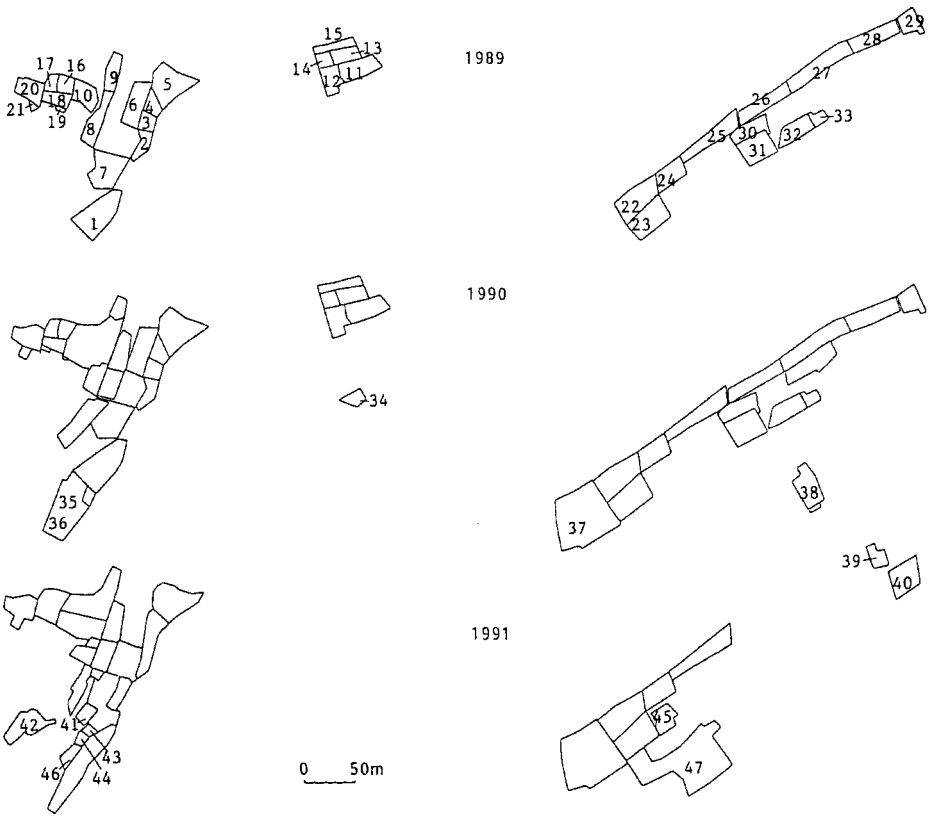


Fig. 14. Farm Filed of Household (A).
The Number Put on the Field Coinside eith That of Fig. 16.
Source: S. Shimada (1996) *Ibid*., p. 116.

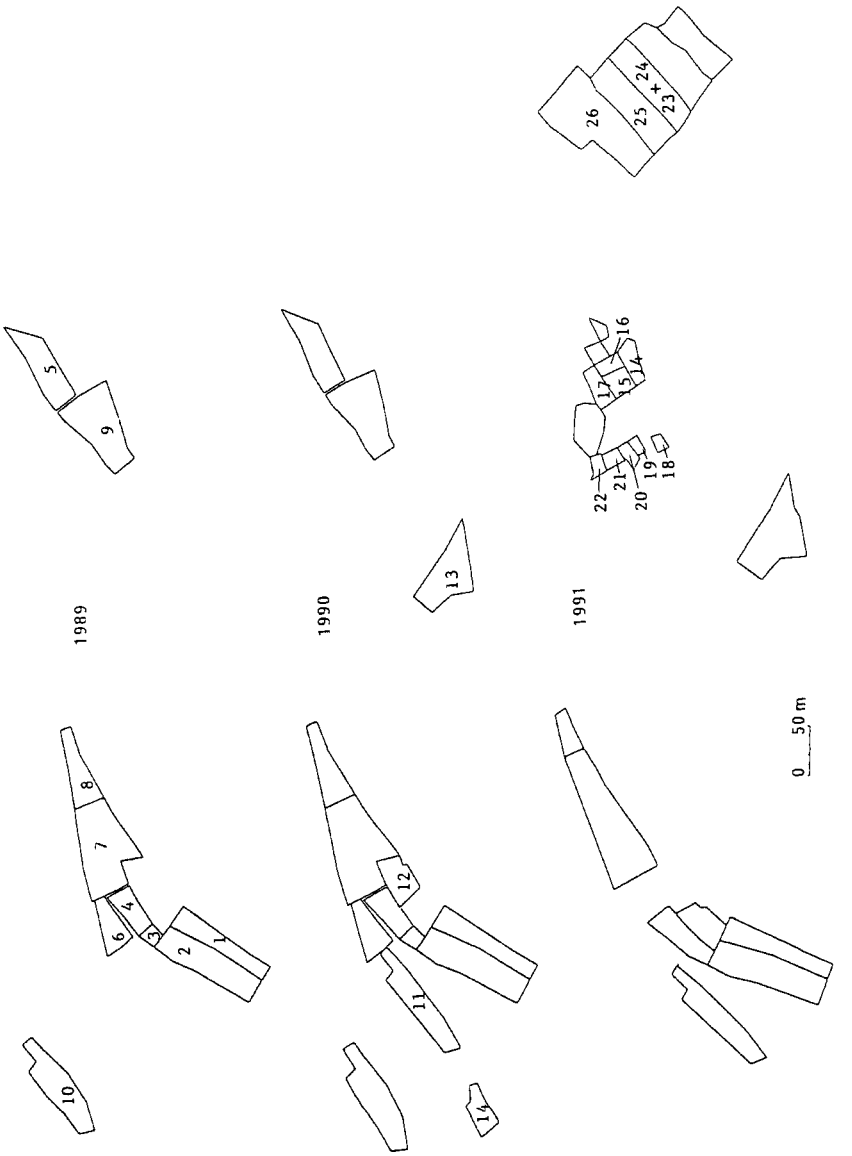


Fig. 15. Farm Fields of Household (B).
The Number Put on the Field Coinside eith That of Fig. 17.
Source: S. Shimada (1996) *Ibid*., p. 117.

The annual agricultural calendar demonstrates the following points. During January to February, in the latter period of the dry season, new fields are cleared. In March, immediately before the rainy season, and in April, the beginning of the rainy season, melon, maize, cowpea, okra and cassava are planted. Next in June, maize and sorghum (guinea corn) are planted. During the period from the late July to August, melons and early maize, okra, and cowpeas are harvested. The dry season arrives from October, and from November to December, sorghum is harvested. In

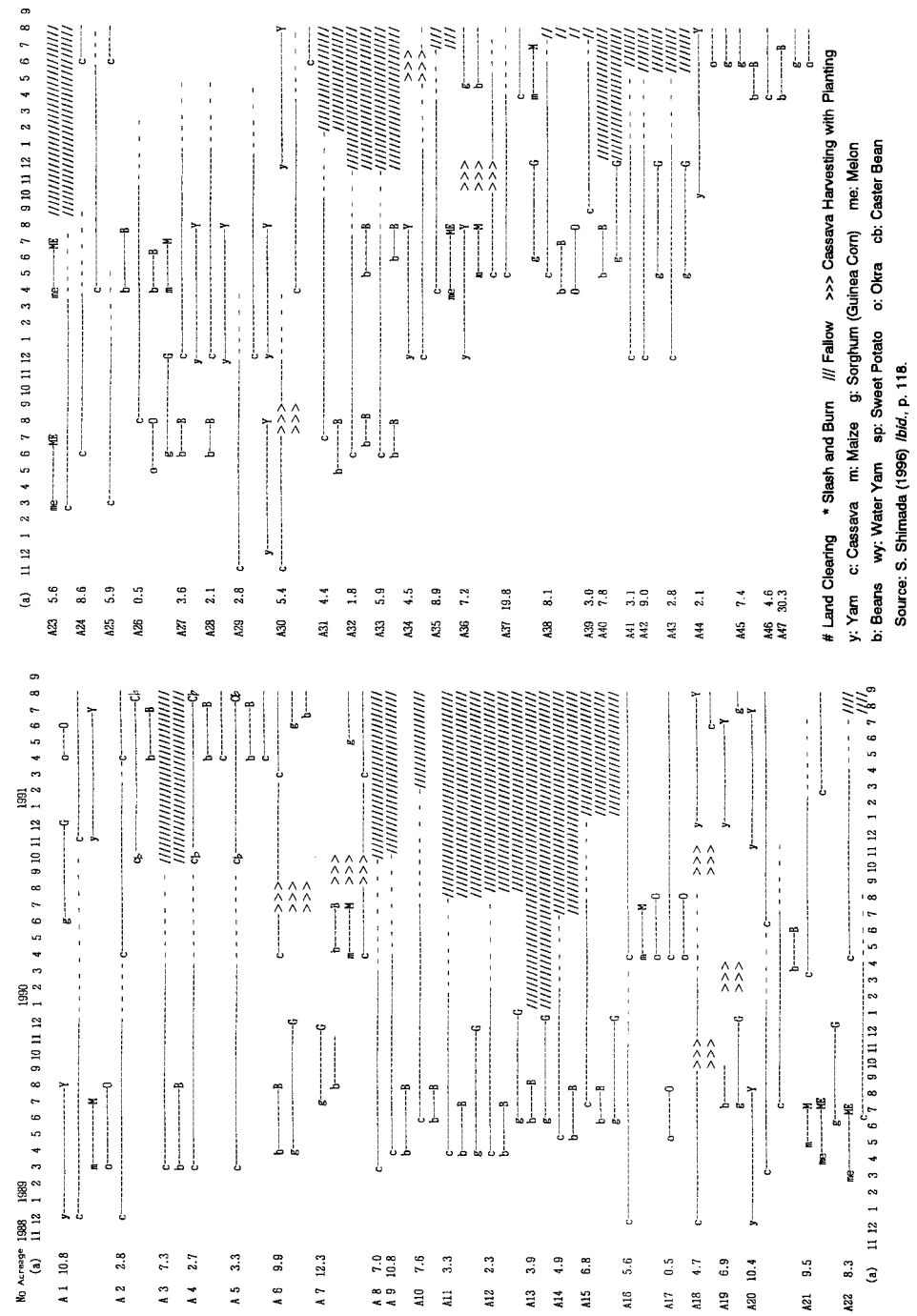


Fig. 16. Cropping Pattern of Household (A) by Filed.

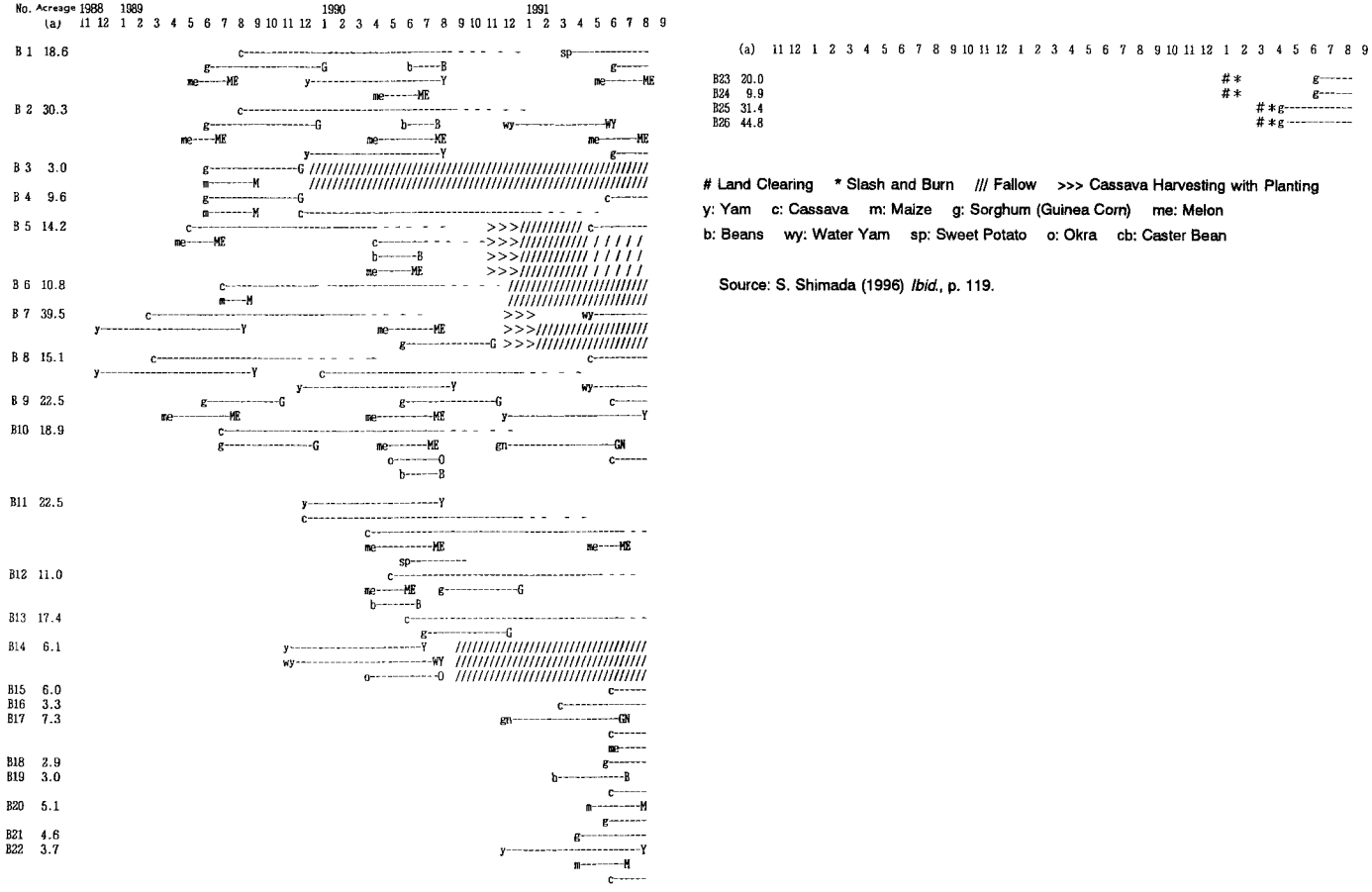


Fig. 17. Cropping Pattern of Household (B) by Filed.

\# Land Clearing * Slash and Burn /// Fallow >>> Cassava Harvesting with Planting

y: Yam c: Cassava m: Maize g: Sorghum (Guinea Corn) me: Melon

b: Beans wy: Water Yam sp: Sweet Potato o: Okra cb: Caster Bean

Source: S. Shimada (1996) *Ibid.*, p. 119.

December, yams that would be harvested in August of the following year, and cassava that would be harvested after December of the following year are planted.

There are four types of crops in this village: ① crops that are planted and harvested within the rainy season (rainy season type); ② crops that are planted in the rainy season and harvested in the dry season (rainy-dry season type); ③ crops that are planted in the dry season and harvested in the rainy season (dry-rainy season type); and ④ crops that are planted throughout the year (all-year-around type). The rainy season types consist mainly of vegetables such as melons, maize, cowpeas, and okra; the rainy-dry season type crop is sorghum; the dry-rainy season crop is yam; and finally, the all-year-around type crop is cassava.

Figures 18 and 19 show the cropping area for each crop by month for farms (A) and (B), and that for sorghum (rainy-dry season type), yams (dry-rainy season type), and cassava (all-year-around type) are depicted here. Despite the difference in area of cassava planted between farms (A) and (B), there is no difference in the cultivation season of these crops between the two farms.

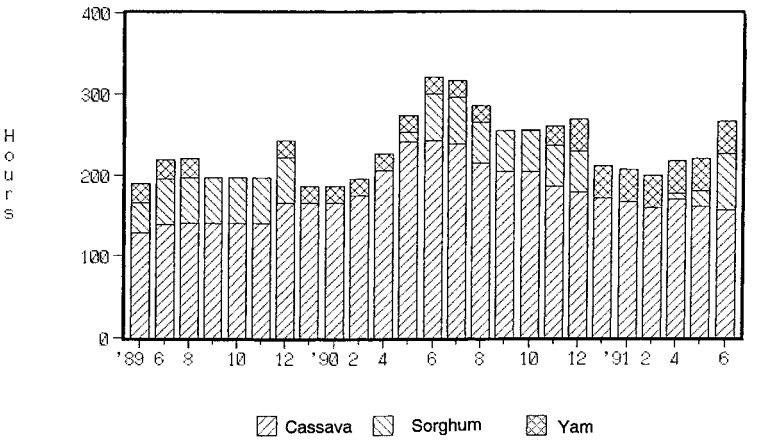


Fig. 18. Monthly Cultivation Area of Household (A) by Crops.

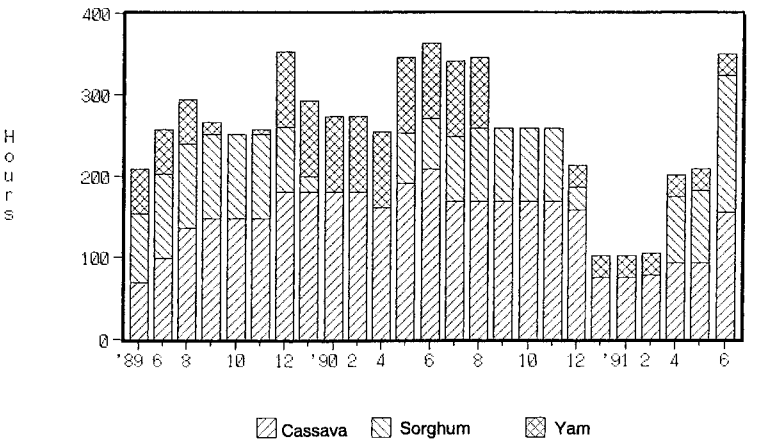


Fig. 19. Monthly Cultivation Area of Household (B) by Crops.

4. *Farm tasks*

Figures 20 to 24 and Table 9 give monthly labor input by type of work of youth (a) of household (A) to examine the seasonal variation of farm tasks. Similarly, Figures 25 to 29 and Table 10 show those of youth (b) in household (B). The two youths (a) and (b), in their mid 20s, graduated from junior high school in the mid 1980s and stayed in the village since they could not find urban jobs, due to the recession of the time. The figures are of their diaries of farm tasks from August 1989 to August 1990.

The diaries were to be recorded by hours though some errors were found for duration of tasks in the afternoons. Hence it is not possible to show the absolute length of time spent for each farm task. The errors had the effect of lengthening the time spent in general, but it is still possible to discuss the relative length of time spent on each farm task. As a reference, working hours for each farm tasks are shown in Tables 11 and 12.

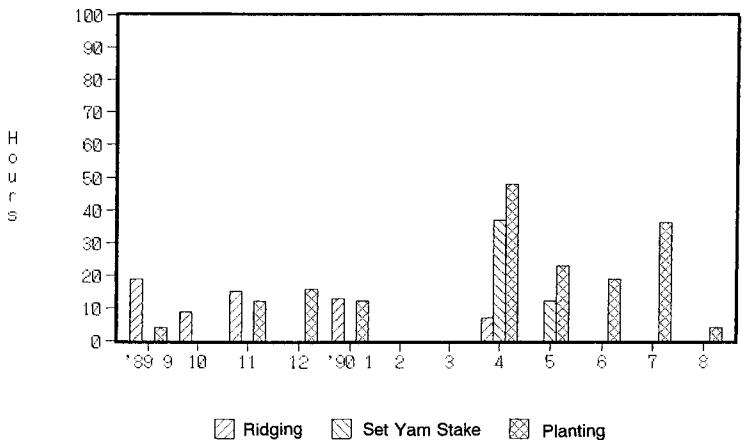


Fig. 20. Monthly Labor Input of Mr. (a) of Household (A): Ridging, Set Yam Stake, Planting.

Fig. 21. Monthly Labor Input of Mr. (a) of Household (A): Weeding, Trapping, Mulching.

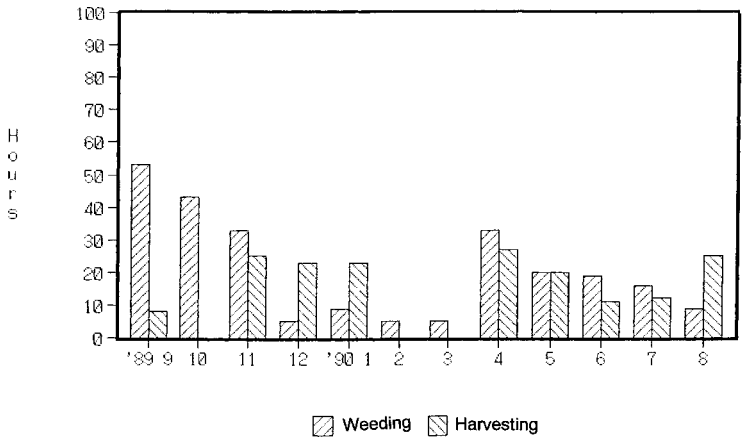


Fig. 22. Monthly Labor Input of Mr. (a) of Household (A): Weeding, Harvesting.

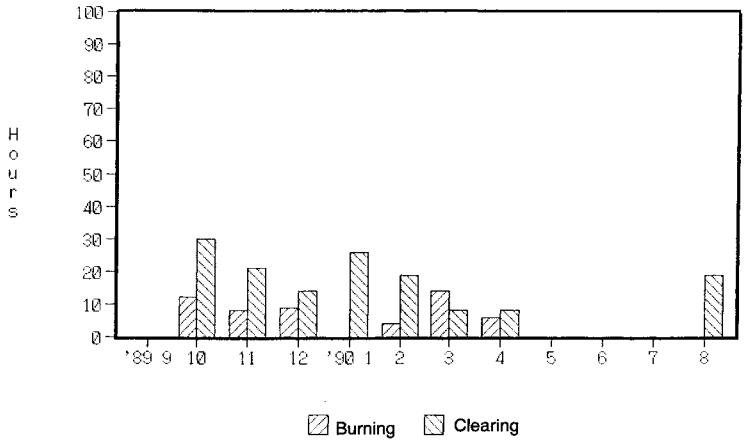


Fig. 23. Monthly Labor Input of Mr. (a) of Household (A): Burning, Clearing.

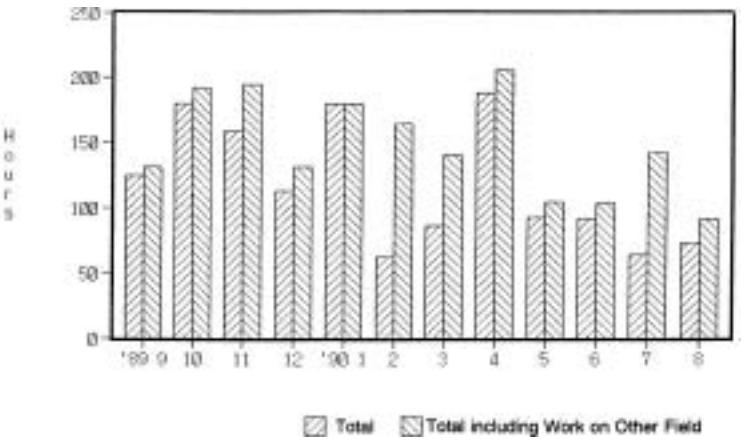


Fig. 24. Monthly Labor Input of Mr. (a) of Household (A): Total.

Table 9. Monthly Labor Input of Mr. (a) (1989.9.1-1990.8.26) (hours)

Month	Burning	Planting	Harvesting	Set Yam Stake	Ridging	Clearing	Watching a Farm	Weeding	Trapping	Mulching	Others	Total
9	0	4	8	0	19	0	41	53	0	0	0	125
10	12	0	0	0	9	30	54	43	25	0	7	180
11	8	12	25	0	15	21	24	33	21	0	0	159
12	9	16	23	0	0	14	32	5	14	0	0	113
1	0	12	23	0	13	26	26	9	30	16	25	180
2	4	0	0	0	0	19	11	5	23	0	0	62
3	14	0	0	0	0	8	23	5	36	0	0	86
4	6	48	27	37	7	8	6	33	16	0	0	188
5	0	23	20	12	0	0	17	20	0	0	0	92
6	0	19	11	0	0	0	35	19	7	0	0	91
7	0	36	12	0	0	0	0	16	0	0	0	64
8	0	4	25	0	0	19	16	9	0	0	0	73
Total	53	174	174	49	63	145	285	250	172	16	32	1413

Source: From the Farming Diary of Mr. (a)

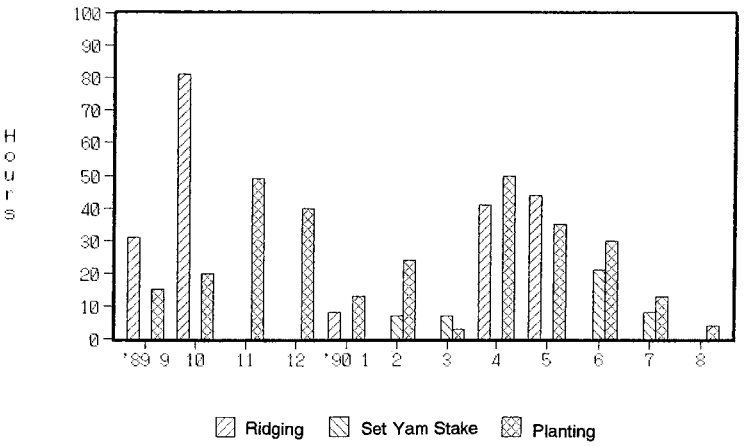


Fig. 25. Monthly Labor Input of Mr. (b) of Household (B): Ridging, Set Yam Stake, Planting.

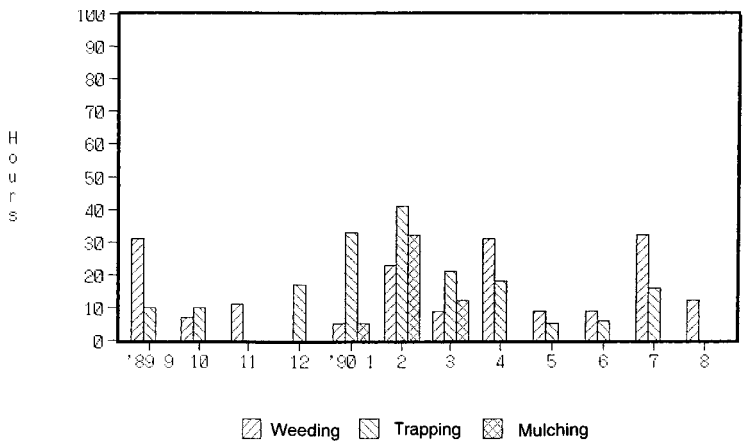


Fig. 26. Monthly Labor Input of Mr. (b) of Household (B): Weeding, Trapping, Mulching.

Fig. 27. Monthly Labor Input of Mr. (b) of Household (B): Weeding, Harvesting.

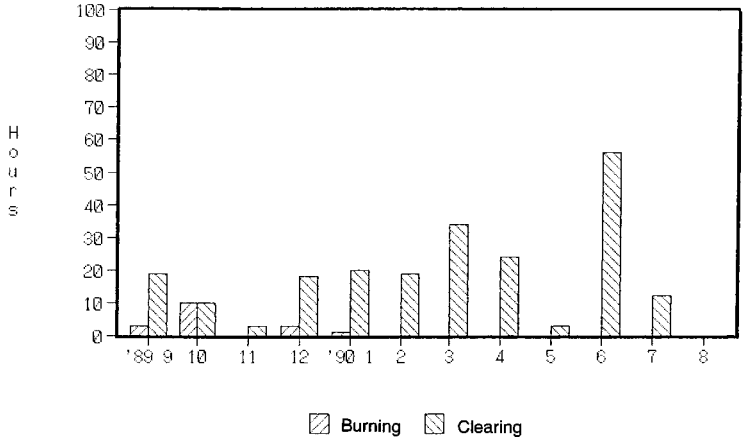


Fig. 28. Monthly Labor Input of Mr. (b) of Household (B): Burning, Clearing.

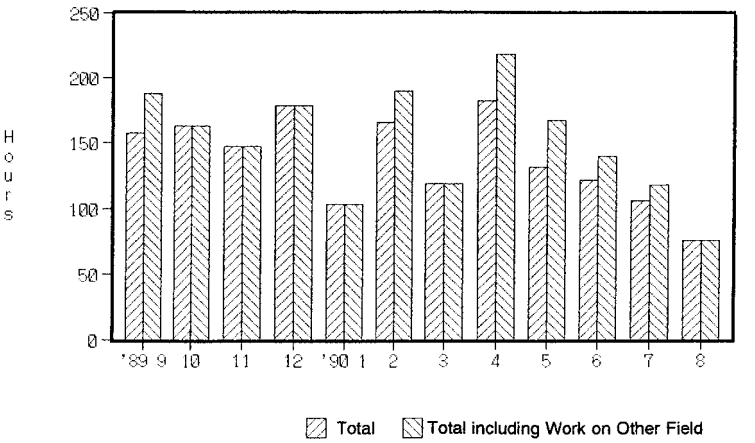


Fig. 29. Monthly Labor Input of Mr. (b) of Household (B): Total.

Table 10. Monthly Labor Input of Mr. (b) (1989.9.1-1990.8.26) (hours)

Month	Burning	Planting	Harvesting	Set Yam Stake	Ridging	Clearing	Watching a Farm	Weeding	Trapping	Mulching	Others	Total
9	3	15	11	0	31	19	14	31	10	0	24	158
10	10	20	13	0	81	10	12	7	10	0	0	163
11	0	49	66	0	0	3	19	11	0	0	0	148
12	3	40	79	0	0	18	14	0	17	0	8	179
1	1	13	12	0	8	20	6	5	33	5	0	103
2	0	24	15	7	0	19	0	3	41	32	5	166
3	0	3	11	7	0	34	22	9	21	12	0	119
4	0	50	5	0	41	24	9	31	18	0	5	183
5	0	35	29	0	44	3	7	9	5	0	0	132
6	0	30	0	21	0	56	0	9	6	0	0	122
7	0	13	22	8	0	12	0	32	16	0	3	106
8	0	4	7	0	0	0	0	12	0	0	53	76
Total	17	296	270	43	205	218	103	179	177	49	98	1655

Source: From the Farming Diary of Mr. (b)

Table 11. Monthly Labor Input of Mr. (a) (1990.8.28-1991.8.18) (hours)

Month	Burning	Planting	Harvesting	Set Yam Stake	Ridging	Clearing	Watching a Farm	Weeding	Trapping	Mulching	Others	Total
8	0	0	0	0	0	0	0	5	0	0		5
9	0	8	26	0	15	13	0	38	30	0		130
10	0	15	33	0	12	12	5	10	23	0		110
11	0	51	12	0	8	8	5	10	21	0		115
12	0	30	17	0	4	4	0	4	14	0		73
1	0	0	22	0	0	7	0	0	2	31		62
2	0	0	6	0	0	5	9	0	7	15		42
3	0	0	35	0	0	6	0	6	8	9		64
4	0	27	0	0	0	81	0	26	29	0		163
5	0	7	0	0	0	9	0	11	11	0		38
6	0	29	9	0	0	36	8	23	19	0		124
7	0	0	0	0	0	50	0	0	3	0		53
8	0	9	0	0	0	0	0	0	0	0		9
Total	0	176	160	0	39	231	27	133	167	55		988

Source: From the Farming Dirary of Mr. (a)

Table 12. Monthly Labor Input of Mr. (b) (1990.8.28-1991.8.18) (hours)

Month	Burning	Planting	Harvesting	Set Yam Stake	Ridging	Clearing	Watching a Farm	Weeding	Trapping	Mulching	Others	Total
8	0	0	0	0	0	0	0	17	4	0		21
9	0	14	55	0	35	4	0	36	4	5		153
10	0	14	23	0	11	5	5	5	15	0		78
11	0	65	11	0	7	3	5	5	4	0		100
12	0	40	14	0	1	6	0	7	15	0		83
1	0	0	17	0	8	0	0	0	18	39		82
2	0	0	8	0	0	6	0	13	6	14		47
3	4	5	7	5	24	51	0	4	0	3		103
4	0	19	0	0	13	28	0	0	10	0		70
5	0	46	23	0	0	13	0	8	4	0		94
6	0	38	34	0	7	3	0	20	6	0		108
7	0	8	24	0	5	0	0	8	1	0		52
8	0	3	12	0	0	0	0	12	3	0		30
Total	4	252	228	11	111	119	10	135	90	61		1021

Source: From the Farming Diary of Mr. (b)

Farm tasks comprise heavy work such as burning, clearing, ridging, setting yam stakes, weeding, and light work such as trapping, mulching, and tending the farm. There are some relatively light tasks in the heavy work category, such as in weeding and clearing. In general, clearing after burning and weeding during the rainy season are heavy work, but those managed throughout the year by women and children are relatively light. This classification of farm tasks is done by male perception of whether the tasks need muscular strength, and subjective evaluation of time spent and intensity of the work. Thus such classification may include male evaluation towards female work itself. Despite such caveat, following their claims, whether muscular strength is required or not as a criterion to distinguish heavy or light work is adopted.

Farm work can also be classified by its seasonal variation: work which is done in a specific period of a year and work which is done throughout the year. The author has defined seasonal tasks as work done less than six months a year, and non-seasonal work as work done for more than six months. Seasonal work includes burning, set yam stakes, ridging, and mulching, and non-seasonal work is the planting of cassava, weeding, trapping, harvesting, and clearing. The table below shows a cross diagram of farm work by heavy/light and seasonal variation.

	Heavy Work	Light work
Seosonal works	Burning, Clearing (just after burning Ridging, Planting of Yam Set yam stakes, Weeding (in rainy season)	Mulching
Non-seasonal works		Planting of cassava, Weeding Trapping, Haresting, Clearing

The table demonstrates that heavy work is done intensively for a short period and work done throughout the year is mainly light. This combined with the planting season of the crops discussed earlier reveals the following points.

① Seasonal heavy tasks are required in the beginning of the rainy season, when the planting of rainy and rainy-dry season crops coincide; so for the planting of yams, maize, melons and sorghum, male labor is required.

② Cassava can be raised without seasonal heavy work, so male labor is less needed for this crop. In some cases, heavy work such as making mounds is needed but in other cases, the planting of cassava is completed by the relatively light work of sticking it's stalks.

③ Under a shortage of male labor, the use of laborers by contract for seasonal heavy work has increased.

4. *Changes in farm management: the effect of S.A.P.*

Changes in the cultivation system and labor input have important implications for change in farm management. The change in farm management can be summarized as follows;

① Diminution of the mixed cropping ratio by an increase in cassava acreage.

② Reduction in the period of land left fallow by an increase in cassava acreage.

③ Partial desolation of the cultivation-fallow cycle by consecutive planting of

Table 13. Cultivation Acreage by Crops and Crop Combination. (0.1 ha)

Crop Combinaiton	Household (A) acreage	%	Household (B) acreage	%
Single cropping				
Cassava (C)	42.7	22.7	—	—
Beans (B)	5.7	3.0	—	—
Okra (O)	0.5	0.3	—	—
Melon (m)	8.3	4.4	—	—
Mixed cropping (two crops)				
Yam (Y)+C	13.2	7.0	54.6	29.9
C+m	5.6	3.0	14.2	7.8
C+B	46.0	24.4	—	—
C+Maize (M)	—	—	10.8	5.9
C+Sorghum (S)	—	—	18.9	10.4
B+S	33.0	17.5	—	—
M+S	—	—	12.6	6.9
m+S	—	—	22.5	12.3
Mixed cropping (three crops)				
C+S+B	12.4	6.7	—	—
C+S+O	0.5	0.3	—	—
C+S+m	—	—	48.9	26.8
M+S+m	9.5	5.0	—	—
Mixed cropping (four crops)				
Y+C+M+O	10.8	5.7		
Total	188.2	100	182.5	100

Source: Field survey in August 1991.

cassava (coincidence of planting and harvesting).

Cultivation acreage by crops and the mix of crops in August 1991 is shown in Table 13. Exclusive planting of cassava comprises 20% of the whole cultivated land for household (A), and for household (B) as well, cassava is the main crop to be planted mixed.

Such changes in farm management may still conserve the productivity in terms of calories produced per unit area, but at the expense of raising vulnerability to the hazard of soil erosion. The reduction in the period of land left fallow is not only a result of the increase in cassava, acreage, but also an increase in population. The social population increase since the beginning of the 1980s increased the demand for land for cultivation, which also had the effect of reducing the fallow period.

CONCLUSION

Nigerian food production had been neglected by the Government since the Colonial Era. This supported the uncertain belief that Nigeria has enough food to feed the nation. It was not until the latter half of the 1970s, when the Government took measures to increase food production, that the Government admitted that there is a food shortage in this country.

The measures taken by the Government, however, had little impact for food crop production and cash crop production. It is ironic that many plans in which the

Government took the initiative and mobilized her institutions fully did not have significant influence, but the programs which the Government was reluctant to start had the most significant impact on agricultural production. It is apparent that governmental or semi-governmental agricultural institutions, which are supposed to increase agricultural production in the country, were not efficient but rather hindered increased production.

The striking increase of food production after S.A.P., however, will not be simply admired as a triumph of liberalization and de-regularization. What happened in a rural food-producing area was that the increase in food production was attained through extensive cultivation. The young men who were expected to play a very important role for cultivation were not eager to engage farming. Instead, they were always looking forward to finding some other employment outside the village. They curtailed labor input on their farms to provide time and energy for job-seeking activity. This is one reason people have increased cassava production.

The rapid price increase of cassava, which was higher than that of maize and yams after S.A.P., has also spurred this tendency. Changes such as reduction, diminution of mixed cropping, shortening of fallow period, and partial desolation of the cultivation-fallow cycle may affect soil conditions. No physical or hydrological study of soil has been done in this village, but, some of signs are already there; low production of crops, and the expansion of surface and gully erosion. It is quite probable that the rapid increase in food production after S.A.P. has attained at the sacrifice of land degradation. This is the vital point to which we have to pay more careful attention in order to assess the effect of S.A.P.

NOTES

(1) Bonat used three similar divisions of 1960-66, 1966-75, and 1975-85. (Bonat, 1989: 48-85)

(2) In the “Green Revolution”, it was advocated that there was a need to support peasant farmers in acquiring agricultural input such as fertilizers, pesticides, seeds, and tools; and to improve in roads and markets. (Federal Ministry of Agriculture, 1981).

(3) United Nations, Food and Agriculture Organization (FAO, 1966). Although admitting a need to reform communal land ownership, most are cautious on its implementation. (Famoriyo, 1979).

(4) Under this act, in fact, the ultimate owner of the land is the nation, and individuals were only given the right of usufruct and occupancy. The government’s main purpose of setting up this act was to facilitate acquisition of public lands. Although there were some members of the committee dealing with this act kept in mind the necessity of agricultural reform, this act was most effective in securing occupancy rights in suburban residential areas and commercial lands. (National Workshop on the Land Act, 1981; Udo, 1970)

(5) Lagemann (1977) reports an example from eastern Nigeria where fertility that gradually declined during productivity was increased within a traditional cultivating method.

(6) Rationality in traditional cultivating methods and peasant behavior is proved by many studies in Agricultural Economics and Anthropology. Since the 1980s, after the failures of large-scale agricultural developments in the 1960s, a need for moderate development in line with the traditional cultivating methods has been recognized at the International

Institute of Tropical Agriculture. Experiments in non-tillage cultivation and in agro-forestry started from such recognition. (Ibwebuike, 1975; International Institute of Tropical Agriculture, 1989)

(7) For a detail review on political problems concerning this political decentralization, refer Shimada (1992).

(8) Not even pretence was paid for traditional agriculture, and no development was expected. Thus "(a) Improved Production Technique- No realistic change can be expected from the peasant nature of Nigerian agriculture or from the drudgery attached to it until the farmer finds an alternative to the existing hoe and cutlass technique of cultivation." (Federal Ministry of Information, Nigeria (n.d.))

(9) "Agro Service Centers" installed under the NAFPP were in charge of the distribution of agricultural tools, fertilizers, and pesticides; selling products; and providing agricultural loans. *The National Accelerated Food Production Program and Extension work* (n.d.) Ibadan: NAFPP

(10) There were 449 Local Governments in 1989, but these never participated in the planning processes of the DFRRI. (Olanrewaju & Falola, 1992).

(11) This region, called the "Middle Belt", has low population density despite its agricultural suitability, and this region was called an agricultural frontier in the 1960s. (Wells, 1974)

(12) For a detailed analysis of the survey results, see S. Shimada (1986), (1989a, b)

(13) In 1983 expatriation, foreign professional workers and skilled labor as carpenter, mason, factory worker, assembler, typist, and nurse were applied milder condition of deportation. These people had to leave the country in four weeks whereas others had to leave within two weeks (*Africa: The International Business, Economic and Political Monthly*, No.140, April 1983, p. 19). In addition, expatriation had not been applied to foreigners working in public sector of the federal government or the state governments. In 1983, there were 35,000 Ghanaian teachers in Nigeria (*West Africa*, 31 Jan.1983, p. 246). In 1985, there were pay delay to teachers in many states, and in some regions, there were even movements to apply user-charges (*West Africa*, 20 May.1985, p. 1019). It is said that in cocoa belt, teaching profession have now become a transitory job for youth aspirants for upward social mobility, as cocoa planting had been. (Berry, 1984)

(14) There are many forms of labor sharing. Paid labor is called ibaro-o, help including volunteer is *ogumbo-o*, and communal work for the community (*epa-dee*) is called *otu-opa*. There is also an institution called *ozidamii paa* in which people can leave their children to take care of elders and to work for them in the fields.

(15) Fields given to boys under 10 years old are usually not fertile fields immediately after a fallow period but cassava fields after 2-3 years of cultivation. These fields are regarded as fields for training, and the boys do not acquire independent usufruct right.

(16) Recently, a new assava breed from the International Institute of Tropical Agriculture (IITA) in Ibadan has been disseminated to Yorubaland, and it then arrived in Ebiya village. The carrier of this new breed had been a youth who went to help farming his relatives in Yorubaland. The new breed can be distinguished by sight from the traditional breed, and is larger in size and gives a higher yield. The local names of the new breeds found in the 1993 survey and their characteristics are as follows: *Anado*: meaning "from Ado-Ekiti" (Yorubaland), which goes well mixed in pounded yam. Cultivable only during rainy season; *Anigara*: meaning "from Igara", and grown in the village since 1992. This was brought from the farm of father's friend in Ondo; *Aneko*: meaning "from Lagos". This is also grown since 1992. The traditional breeds are *Echukaovivi* of which the seeds are available, and *Okuekue* which is cultivable throughout the year.

(17) There are many kinds of juju. For example, cursing the robbery to be attacked by the ants of the termite hills of the field can be done by using "*eku*". The bottle of "*eku*" is

hung with cloth which had been used for wrapping corpse on the end of a pole and put up on the termite hill in the field. The "*eku*" was available from former Bendel state at 150-300 Naira (in 1990). People go to Bendel state to buy this rather inexpensive "*eku*" by taking the opportunity to be farm laborers.

REFERENCES

Abalu, et al. (n.d.) *The Green Revolution in Nigeria?* Samaru, Institute for Agricultural Research, Ahmadu Bello University.

Adegboye, R.O. 1966. Farm tenancy in western Nigeria. *The Nigerian Journal of Economic and Social Studies*, vol.8, 3.

Afolayan, A.A. (n.d.) *Rural Migration and Socio-economic Conditions of the Source Region: Ebira Division, Nigeria*.

Agboola, A.A. 1979. *An Agricultural Atlas of Nigeria.* Oxford Univ. Press, Oxford:.

Ajiki, K. & S. Shimada 1990. 70-nendai-ikou-no-naijeria-nouson-ni-okeru- nougyou-keiei-no-henka (in English: A study on changes in the farming system in Nigeria since the 1970s). *Afurika-kenkyu (Journal of African Studies)*, vol. 37.

Aluko, S.A. 1973. Industry in the rural setting. *Rural Development in Nigeria: Proceedings of the 1972 Annual Conference of the Nigerian Economic Society* .

Berry, S.S. 1975. *Cocoa, Custom and Socio-economic Change in Rural Western Nigeria*. Clarendon Press, Oxford.

————1984. Oil and disappearing peasantry: Accumulation, differentiation and underdevelopment in western Nigeria. *African Economic History*, no. 13.

Bonat, Z.A. 1989. Agriculture. In (Kayade, M.O. and Usman, Y.B. eds.) *Nigeria since Independence: The First Twenty-five Years: vol. II; (The Economy)*. Heinemann Educational Books, Ibadan, Nigeria.

Central Bank of Nigeria 1992a. *Impact of Structural Adjustment Programme (SAP) on Nigerian Agriculture and Rural Life, vol. I: The National Report*, CBN/NISER, Lagos.

Essang, S.M. 1973. The 'Land Surplus' Notion and Nigerian agricultural development policy. *West African Journal of Agricultural Economics* (*WAJAE)*, 2 (1).

Famoriyo, S. 1972. Land Tenure and Food Production: An Analytical Exposition. *WAJAE*, 1 (1).

————1979. *Land Tenure and Agriculture in Nigeria. Nigerian* Institute of Social and Economic Research, Ibadan.

Faruqee, R. 1994. Nigeria: ownership abandoned. In (Husan, I. & R. Faruqee, eds.) *Adjustment in Africa: Lessons from country case studies*. Washington, World Bank.

Federal Ministry of Agriculture 1981. *The Green Revolution: A Food Production Plan for Nigeria (Final Report)*. Lagos.

Federal Ministry of Economic Development, Nigeria 1963. *National Development Plan 1962-68*, Lagos.

————1975. *Third National Development Plan 1975-80*. Vol. 2., Lagos.

Federal Ministry of Information, Nigeria (n.d.) *Second National Development Plan 1970-74, Programme of post-war reconstruction and development*. Lagos.

Federal Ministry of National Planning, Nigeria (n.d.) *Fourth National Development Plan 1981-85*, vol. 1. Lagos.

Helleiner, G.K. 1966. *Peasant Agriculture, Government, and Economic Growth in Nigeria*. Richard D. Irwin, Homewood.

Ibwebuike, R.U. 1975. *Barriers to Agricultural Development: A Study of the Economics of Agriculture in Abakaliki Area, Nigeria* (Ph.D., Stanford Univ.).

International Institute of Tropical Agriculture 1989. *Annual Report 1988/89*, pp.6-11. Ibadan.
Lagemann, J. 1977. *Traditional African Farming Systems in Eastern Nigeria: An Analysis of Reaction to Increasing Population Pressure.* Welt Forum Verlag, München.
Ministry of Economic Development, Kwara State, Nigeria (n.d.) *Statistical Digest 1970-72*. Ilorin.
Muroi, Y. 1989a. Naijeria-ni-okeru-Nohgyo-kaihatu-seisaku. In (Yoshida, M. ed.) *80-nenndai-afurikashokoku-no-keizai-kiki-to-kaihatsu-seisaku* (in English: Economic crisis and development policies in African states in 1980s). Institute of Developing Economies (I.D.E.), Tokyo.
————1989b. Naijeria-ni-okeru-nouson-shakai-no-hennyo. In (Hayashi, K. ed.) *Afurika-nouson-shakai-no-saihensei* (in English: Reorganization of African rural society). I.D.E., Tokyo.
National Population Commission 1998. *1991 population census of the Federal Republic of Nigeria; an analytical report at the National level*. Abuja.
National Workshop on the Land Act 1981. *The Land Act: Report of a National Workshop Held at the University of Lagos May 25-28, 1981*. Lagos Univ. Press, Lagos.
Okigbo, P.N.C. 1962. *Nigerian National Accounts 1950-57*. Government Printer, Enugu.
Okuneye, P.A. 1992. The Problem of Declining Food Production. In (Olanrewaju, S.A. & Falola, T. eds.) *Rural Development Problems in Nigeria*. Avebury, Aldershot.
Olanrewaju, S.A. & T. Falola, 1992. The Prospect for Rural Development. In (Olanrewaju, S.A. & T. Falola, eds) *Rural Development Problems in Nigeria*. Avebury, Aldershot.
Olayemi, J.K. 1972. Increased Marketing as a Strategy for Generating Increased Food Production: The Nigerian Experience. *WAJAE*, 1 (1).
Oni, S.A. 1972. Increased Food Production through Agricultural Innovations in Nigeria. *WAJAE* 1 (1).
Oyaide, O.F.J. 1981. Agricultural Input Supply and Distribution Policy in the Fourth National Development Plan. In (Idachaba, F.S. *et al.* eds.) *The Crop Subsector in the Fourth National Development Plan, 1981-85 (Proceedings of a Workshop Organised by the Federal Ministry of Agriculture, August 29-30, 1979)*. Federal Ministry of Agriculture, Lagos.
Prothero, R.M. 1957. Migratory Labor from Northwestern Nigeria. *Africa*, 27.
Richards, P. 1985. *Indigenous Agricultural Revolution.* Hutchinson, London.
Shimada, S. 1977. Intensification Process of Land Use in Southern Nigeria. *Science Reports, Tohoku Univ., 7th Series. (Geography)*, 27 (2), pp. 201-217.
————1983. Naijeria-sekiyu-bumu-ka-no-shokuryo-busoku. In (Haseyama, T. & Kojima, R. eds.) *Daisan-sekai-no-shokuryo-mondai* (in English: Food problems in the Third World). I.D.E., Tokyo.
————1986. Change in labor migration in rural area of Nigeria: Case study of Ebiya village, Kwara state. *Science Reports of the Tohoku Univ. 7th Series. (Geography)*, vol.36, 2.
————1987. Naijeria-no-kokoa-beruto-keisei-katei (in English: Expansion process of cocoa belt in Nigeria) *Ajia-keizai (Monthly Journal of I.D.E.)*, vol. 18, no. 4.
————1989a. Yoruba-lando-ni-okeru-igubira-jin-no-roudou-idou. In (M. Koga ed.) *Daisan-sekai-wo-meguru-segurigeshon-no-shomondai* (in English: Problems of segregation in the Third World). Hitotsubasi University,
————1989b. 70-nenndai-iko-naijeria-no-nouson-shakai-henyo-no-ichi-danmen. (in English: A study on transition of Nigerian rural society since 1970), *Jinbun-chiri (The Human Geography)*, vol.41, 4.
————1991. Economic change and labor migration in rural Nigeria. *Geographical Review of Japan*, vol. 64 (B2).

————1992. *Chiikikan-tairitu-no-chiikikouzou* (in English: Structural analysis of regional conflict). Taimeido, Tokyo.
————1996. Naijeria-no-keizaihenka-to-Shokuryokozahenka. In (H. Hoshomi et. al eds) *Afurica-no-shokuryomondai* (in English Food problems in Africa: case studies of Ghana, Nigeria, and Tanzania). I.D.E., Tokyo.
Olatunboson, D. 1975. *Nigeria's Neglected Rural Majority*, Oxford Univ. Press, Ibadan.
Udo, R.K. 1970. *Land use Policy and land Ownership in Nigeria*. Ebieakwa Ventures, Lagos.
————1982. F*ood Production and Agricultural Development Strategies in Nigeria*, (I.D.E. Joint Research Program Series 31). I. D. E., Tokyo.
United Nations, Food and Agriculture Organization (FAO) 1966. *Agricultural Development in Nigeria, 1965-1980*. FAO, Rome.
Wells, J.C. 1974. *Agricultural policy and economic growth in Nigeria 1962-1968*. Oxford Univ. Press, Ibadan.
West Africa, several issues.

————Accpeted *December 27, 1999*

Autour's Name and Address: Shuhei SHIMADA, *Graduate School of Asian and African Area Studies, Kyoto University, Sakyo-ku, Kyoto, 606-8501, JAPAN. E-mail: Shimada@jambo.africa.kyoto-u.ac.jp*