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AGRICULTURAL INNOVATION IN RURAL LIBERIA:

A STUDY OF FARMERS AMONG THE KISSI

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LI Agricultural Innovation in Rural Liberia; A...
631 Western Illinois Univ.
A479 Agricultural Innovation in Rural Liberia;
A Study of Farmers Among the Kissi. Igolima
T.D. Amachree. Sep. 1970.
71 p.
Supported by USAID/Liberia.

1.Innovations - Agriculture - LI.2.Rice - LI.
3.Agricultural production - LI.4.Rural conditions -
LI.5.Sociology, Rural - LI.6. Farmers - LI.I.Title.
II.Amachree, Igolima T.D.

ACKNOWLEDGMENT

We are indeed grateful to the United States Aid for International Development for Liberia (USAID/L. or providing the necessary funds for the prosecution of this research. We are also greatly indebted to the government of the Republic of Liberia (R.L.) for material assistance and genuine interest and concern about this research. Without their aid and assistance and permission, this study would never have been done. Our thanks also go to Dr. Paul D. Ma of the College of Agriculture at the University of Liberia for his great assistance and untiring efforts in getting the study started and for his continued interest as the study progressed. We are further grateful to the University of Liberia (L.U.) for its cooperation and material assistance. We recognize and are appreciative of the instructional adjustments it had to make in giving time off for the professors in the research team to conduct this important research. Our unalloyed thanks go to Chief Tamba Taylor, Paramount Chief of the Kissi Chiefdom, for introducing us to his people and also for his kindness and invaluable hospitality. Without his kind consent and help, this study would have run into grave difficulties. We are sincerely appreciative of his help and kindness. Above all, we are greatly thankful to those many farmers and their families who let us into their homes and cooperated with us most fully in conducting this research. We are also grateful for their frankness in

answering the numerous questions and for taking us, at great inconvenience to them, to their farms and for being generally helpful. It is to these farmers that we dedicate this study.

AGRICULTURAL INNOVATION IN RURAL LIBERIA: A STUDY OF FARMERS AMONG THE KISSI

By Dr. Igolima T. D. Amachree

1. Introduction

An increase in the production of domestic rice in order to meet the growing demand and also to offset the steadily growing import of foreign rice has been a concern of administrators, politicians and other agencies both foreign and domestic, since about the middle of the 1960s.[1] It has been estimated that in 1968 about $8.7 million dollars were spent on imported rice[2] and the indication is that this figure rose in 1969. This state of affairs has led to concerted efforts at curtailing rice imports and increasing domestic rice production. As the Department of Agriculture states in its annual report: "This situation has created a strong desire on the part of the Liberian Government to offset initially the annual increase in rice imports....., and eventually to become self-sufficient in rice production."[3] This policy is what is generally referred to, in Liberia, as "Operation Production."

This study represents one of the many approaches to Operation Production or increasing domestic rice production.

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[1] Economic Survey 1968: Department of Planning and Economic Affairs, Republic of Liberia, Monrovia, June 1969 p. 71.

[2] Ibid: Table 7.8 p. 80.

[3] Annual Report: Department of Agriculture, Republic of Liberia, Monrovia 1969 pp. 11-12.

The study which was conducted in the Kissi Chiefdom of Loffa County in Liberia was aimed primarily at identifying current patterns of agricultural production and the socio-cultural factors affecting or inducing these patterns. The identification of these patterns, it was hoped, would lead to a better understanding of the situation and thereby greatly aid the meaningful introduction of significant innovations in rice production.

2. Method of Research

The selection of the research site was conditioned by a number of factors including the presence of pilot rice schemes of the Department of Agriculture and the large cultivation of rice by the Liberian Produce Marketing Company (LPMC).

The research lasted two months--February and March 1970 and in all, 315 farmers were interviewed mainly from the Rankole and Wam Clans. According to the 1962 census, there are about 8,680 persons in these two clans of which 3,979 are male.[4] Our non-random sample thus represents about 8% of the male population in these two areas. However, if we assume what obtains in the general population to be true for the Kissi area i.e. the fact that about 37% of the population are under 15 years of age, then our sample would represent about 13% of the working-age population in the two areas.

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[4] 1962 Census of Population: Republic of Liberia, Monrovia, 1964 pp. 9-4 and 9-5 Table 1.

The major research tool was the questionnaire which was supplemented by interview schedules and interviews with significant individuals in the community. These interviews were recorded. We also attempted, at certain points, to use the oral history technique. We found these supplementary tools to be very useful in a fuller understanding of the responses to the questionnaire. Finally, we also utilized the non-participant observation technique.

The research project used seven trained interviewers in the main. Four of these were undergraduate students at the University of Liberia, two were teachers at the elementary school in Shelloe and one was a former Z.T.T.I. student teaching in Foya. There were also two others who worked briefly with us but whose services were terminated because of inefficient work. One of the University students left the group about one-third of the way through.

We did not have a single refusal and we received tremendous cooperation from the farmers. Not only were they willing to be interviewed but they were also kind enough to take us to their farms so that we could measure the size of the farms, and also to see for ourselves what crops are grown, what implements are used and what general problems they encounter on their farms.

Since the study was, in the main, exploratory and not hypothesis-testing, we relied heavily, in our analysis of the data, on frequency distributions and central tendencies which are mainly descriptive statistics. However, a few hypotheses

dealing with attitudes to change and farming were tested. In this case we relied on the Pearson Product Moment Correlation and the level of significance was put at .05.

Mr. Thomas B. Ken, Instructor of Sociology at the University of Liberia and Mr. Jefferson Taplah, Instructor of Anthropology at the University of Liberia helped to supervise the administration of the questionnaires. They were also greatly helpful in the organization of the research.

Finally, we consider our sample size large enough to permit inferences to the whole Kissi area.

3. Analysis

3.1 General Characteristics of the Sample

By their own self-definition, the farmers in our sample are made up of 305 Kissis, 9 Mandingoes and 1 Mende. This was in response to the question: "What is your tribe?" When we asked for the tribe of their fathers we found that 306 have Kissi fathers, and 9 have Mandingo fathers. On the other hand, 305 have Kissi mothers, 5 have Mandingo mothers, 3 have Mende mothers, 1 has a Loma mother and another 1 has a Gbande mother. The Kissis have a strong patriarchal and patrilineal system i.e. people generally derive their lineage from their father's tribe. The one exception we found was a farmer who said he is Mende even though his father is Kissi. His mother is Mende.

The mean age of the farmers is about 41 years. Ninety-two per cent of them are married, 3% are divorced, 3% are single and 2% are widowed. Of those who are married, 55% have only one wife, 23% have two wives and 22% have more than two wives.

Of the 315 farmers, about 88% have had at least one child and 12% have had no children. The 88% or 278 who have had children have had a total of 1,618 children which is about six children per farmer. Of the 1,618 children, about 981 or 61% are living and 637 or 39% are dead. This means that about 4 out of every 10 children in the Kissi area die or a 40% infant mortality rate.

At the time of our study, there were about 1,418 persons in the 315 households or about 5 persons per household.

Migration from the rural areas has been a concern of both urban and rural sociologists. The argument has been two-pronged. On the one hand it is argued that the influx of rural migrants into urban areas causes urban congestion leading to all the problems associated with urban areas. On the other hand it is argued that the efflux of rural people depopulates the rural areas leading to lower agricultural production. We therefore, decided to measure the rate of migration from the rural areas and also to indicate where these rural migrants go to and what jobs they do in the places they migrate to.

About 46% (146 out of the 315 farmers) indicated that some people in their households have left for a rather parmanent settlement in other places. About 54% have no one who has left the household on a parmanent basis. On the whole 432 persons have left the villages to seek their fortunes elsewhere. Of the 432, 220 are men and 212 women. Tables 1 and 2 show where these rural migrants are currently located and what type of work they are doing.

TABLE 1

Current Location of Rural Emigrants

Location	Per cent (No.)
Urban	52.8 (228)
Semi-urban	2.8 (12)
Semi-rural	4.6 (20)
Rural	33.3 (144)
Unknown	6.5 (28)
Total	100.0 (432)

Table 1 shows quite clearly that a majority of those who migrate from the rural areas go to urban areas. Nearly fifty-three per cent of those who left the villages went to urban areas. If we add to this those who went to semi-urban areas we have nearly 56% going to some urbanized place.

It is pertinent at this point, to indicate briefly our definition of urban, semi-urban, semi-rural and rural. Urban areas are defined arbitrarily as centers of industrial activity and population concentration. Included under this

category are places like Monrovia, Harbel (Firestone), Yekekpa, Bong Mines, Bomi Hills, Buchanan etc. Their main distinguishing characteristics are that they have a modern industrial complex and also have a degree of population density.

Semi-urban areas are mainly administrative capitals and some other areas that have a degree of population concentration without much industrial activity. These places include Gbanga, Zorzor, Voinjama, Kakata, Robertsport etc. Their main characteristics are administrative and commercial and they also have a degree of population density less, however, than the population density of the urban areas.

Semi-rural areas are characterized by less population density. They also have less commercial activity than semi-urban areas. There are no industrial plants in or near the area. Places like Foya Airfield and Shelloe fit into this category. One major distinguishing characteristic of semi-rural areas is that they are located in the center of farming areas so that farmers can go easily in and out of them. They possess some accountrements of modernization and yet are so located that the general atmosphere in them is rural.

Rural areas form the residual category i.e. all those areas that are neither urban nor semi-urban nor semi-rural are defined as rural.

The pattern of migration from the rural areas is further indicated by the types of jobs that they hold.

Table 2 shows this.

TABLE 2

Current Jobs of Rural Emigrants

Jobs	Per cent (No.)
Farming	25.5 (110)
Technical	25.0 (108)
Schooling	12.3 (53)
Housewife	10.0 (43)
Domestic	7.4 (32)
Business	6.0 (26)
Clerical	4.6 (20)
Unknown	9.2 (40)
Total	100.0 (432)

Technical jobs are defined as any job in an industrial organization that does not involve clerical work. Thus this category includes under its rubric rubber tappers at Firestone, auto mechanics, plumbers, fitters, welders etc. at any of the mining industries. The idea was not to identify the specific technical job but rather the location of such a job. All those who carry on any type of commercial business other than farming are included in the category of business. Domestic includes all those in domestic service such as cooks, stewards, baby-sitters etc. Housewives are those who keep house primarily and are not engaged in any other kind of work. The rest of the categories are self-explanatory.

Significantly then, about 48% of all rural emigrants find themselves in some kind of an urban-industrial job.

This bears out the pattern that was established by Table 1. The migration from the rural areas, therefore, is a migration primarily to urban areas and to urban-industrial jobs.

The next step was to elicit from the farmers the reasons that were given by those who migrated. The responses to this question should be taken with some caution precisely because the actual reasons might have been lost with time or that no actual reasons were given. These reasons therefore must be taken as the farmers' own interpretation of such reasons. The distribution is given in Table 3.

TABLE 3

Reasons for Rural Emigration

Reasons	Per cent (No.)
Marriage	22.9 (99)
To seek Employment	21.1 (91)
To go to School	15.3 (66)
Family too Crowded	5.1 (22)
Just wanted to Leave	3.9 (17)
Reasons Unknown	31.7 (137)
Total	100.0 (432)

Besides mostly women who left to get married, a majority of those for whom reasons are available, left to seek employment. It is significant that about 5% gave overcrowding or population density in the family as reason for migrating to another place.

On the other end of emigration from the villages is re-migration i.e. those who left the village for one reason or another for a rather parmanent settlement elsewhere but have returned to the villages. In the literature it is assumed that these individuals, because of their contact with modernization, become prominent people in their villages and therefore potential change agents.[5] Table 4 shows both the number and previous jobs of the re-migrants.

TABLE 4

Previous Jobs of Re-migrants

Previous Jobs	Per cent (No.)
Technical	82.5 (47)
Farming	10.5 (6)
Business	3.5 (2)
Schooling	1.8 (1)
Clerical	1.8 (1)
Total	100.1 (57)

A total of 57 persons have re-migrated mostly after working in other places. Of these, a majority (about 83%) were previously engaged in technical jobs mostly at Firestone and at the mines. We did not find these people to be utilized exactly in the manner described in the literature.

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[5]Peter Von Blanckenburg: "The Relationship Between Innovation Processes and General Socio-economic Conditions", The Process of Social and Technical Innovation in Rural Development. Report on a seminar by the German Foundation for Developing Countries. Berlin 17 July to 2 August 1968, pp. B2 - B20.

They were generally much older and did not farm any better than the general population. Only 3 out of the 57 were indicated as those to go to for farming help. Their help was generally sought, however, when the matter concerned "government palavar" i.e. when a government functionary came to the village, these men's advice was usually sought. Their significance lies in the fact that change agents could use them as links for introducing innovation in the villages.

The reasons why these re-migrants are not sought for help in farming can also be seen on Table 5 which gives the reasons for the return of the villagers.

TABLE 5

Reasons for the Return of Re-migrants

Reasons	Per cent (No.)
To help Family	68.4 (39)
Lost Job	7.0 (4)
Retired	3.5 (2)
Married	1.8 (1)
Others (Unknown)	19.3 (11)
Total	100.0 (57)

Table 5 indicates that a majority of the re-migrants (68%) returned to the villages primarily to help their families. Actually, however, 36 out of the 39 for whom this reason was given had retired. The picture that emerges from this is that a majority of the re-migrants are old men who have really past their prime for working hard on the farms.

One could understand then why their aid is not sought in matters of farming. However, their age and their contact with modernization put them in position to be sought for aid in matters that are outside the province of local affairs and deal with "government palavar".

SUMMARY

Our sample represents a significant though non-random proportion of the farming population among the Kissi for us to make valid inferences to all farmers in Kissi Chiefdom. The sample consisted primarily of middle-age farmers who are household heads. The mean age is 41 years. The infant mortality rate is about 39% or 4 out of every 10 children that are born.

The migration rate to urban areas appears to be fairly high. There are 432 such migrants out of 315 families or about 1.4 rural emigrants per family. The 315 households in our sample have a total of 1,418 persons which means that there is about 23.4% out-migration from the villages or about 23 out of every 100 villagers emigrate mostly to urban areas. On the other hand, while 432 persons have emigrated, only 57 persons have re-migrated. This gives a net unfavourable migration balance of 375 persons. The actual out-migration is about 20%. As was indicated, most of the rural emigrants go to urban or semi-urban areas and get employed primarily in industrial establishments as technicians. Most

of the re-migrants are retired men whose knowledge on farming techniques was in doubt as evidenced by the fact that very few of the farmers go to them for aid in farming. However, their advice is sought in matters that concern "government palavar" and as such could serve as potential instruments for change agents such as extension workers and other change agents.

Our sample excluded all women not because they are not important but that in a strongly patriarchal society formal authority in the family rests with the men and they are also more potential targets for change.

3.2 General Farming Practices and Crops Raised

One of the important aspects of this research was the identification of the crops that are grown in the area, the crops that are most important for consumption and for marketing, and the general problems that the farmers face in growing their crops. This section of the analysis will concentrate on these aspects.

In order to identify the crops raised in this area, a list of 37 crops, crop-products and others including animals was constructed. The farmers were asked to identify which of these they grow or raise. In addition to this, a set of other questions was asked so that the farmers could indicate the crops from which they derive the major part of their income. They were asked to indicate three such crops

and rank them in the order of their income generation for the farmers.

The reasoning behind this second set of questions was to identify the crop or crops that link the farmers to the cash-nexus or to a market economy. Significantly, a majority of the farmers did not derive the major part of their income from rice or to put it differently, rice was not the crop from which the farmers derived the major source of their income. Farmer after farmer said that he grows rice primarily to eat and feed his family. In this sense also, rice constitutes a status or prestige symbol to the extent that the more rice he has stored up in his bin the more visible is the sign that he is capable of and indeed is taking care of his family. We consider this a significant finding in view of the attempts that are currently afoot not only to increase rice production but also to increase the production of the rice produced for the market. To the extent that the farmers do not look at rice as primarily a marketable commodity to that extent will attempts at inducing them to market their surplus rice fail. We will return to this issue later in the analysis.

Let us turn to the items that are produced or raised and the per centage and number of those who produce or raise them. Table 6 is intended to do this.

TABLE 6

Crops etc. Grown or Raised by the Farmers

Crops etc.	Per cent (No.) who grow or raise
1. Upland Rice	95.9 (302)
2. Swamp Rice	91.8 (289)
3. Cane Juice	87.9 (277)
4. Coffee	87.9 (277)
5. Plantains	82.2 (259)
6. Banana	79.7 (251)
7. Oranges	79.4 (250)
8. Corn	73.0 (230)
9. Sugar Cane	71.4 (225)
10. Cocoa	69.5 (219)
11. Kolanuts	68.9 (217)
12. Beans	68.3 (215)
13. Okra	66.7 (210)
14. Bitterballs	60.9 (192)
15. Bitter leaf	45.7 (144)
17. Chicken	45.4 (143)
18. Cassava	44.4 (140)
19. Eddo	42.9 (135)
20. Grapefruit	40.0 (126)
21. Plato	34.0 (107)
22. Pawpaw	29.8 (94)
23. Pumpkins	28.9 (91)
24. Palm Nut	25.7 (81)
25. Yam	25.1 (79)
26. Butter Pea	23.8 (75)
27. Lemons/Lime	23.2 (73)
28. Sweet Potato	22.9 (72)
29. Peanuts	21.9 (69)
30. Goats	16.5 (52)
31. Beniseed	10.2 (32)
32. Collard Greens	10.2 (32)
33. Cattle	6.3 (20)
34. Pigs	6.0 (19)
35. Cabbage	1.6 (5)
36. Rubber	0.9 (3)
37. Watermelon	0.6 (2)

Table 6 is self-explanatory in terms of the numbers and per centages of those who grow or raise the items in our list of 37. The ten more commonly grown crops are rice

(upland and swamp), cane juice, coffee, plantains, banana, oranges, corn, sugar cane, cocoa and kolanuts.

Table 6 tells us what crops are grown and what proportion of the farmers grow them but it does not tell us the crops from which the farmers derive the major part of their income. In order to explore this and thus to identify the crops that are grown primarily for the market, the farmers were asked to tell us the three most important crops from which they derive the major part of their incomes. They were also asked to rank these crops in order of their income producing potential for them. The scores were then weighted. The scores for the first most important income-producing crop were multiplied by three; the second crop scores were multiplied by two and the scores of the third most important income-producing crop were multiplied by one. The resulting scores were then arranged in order as shown on Table 7.

TABLE 7

Three Major Income-Producing Crops and the

Number of Farmers Selecting Them

	1st Crop	No.	2nd Crop	No.	3rd Crop	No.
1.	Coffee	128	Coffee	92	Cocoa	45
2.	S'cane	106*	Cocoa	74	Rice	28
3.	Cocoa	26	S'cane	42	Plantains	27
4.	Rice	19	Banana	14	Oranges	26
5.	Oranges	5	Rice	13	Coffee	25
6.	Okra	4	Oranges	11	S'cane	23
7.	Plantains	4	Plantains	11	Banana	13
8.	Banana	3	Okra	3	Kolanuts	8
9.	Kolanuts	3	Cassava	2	Bitter Balls	3
10.	Palm Nuts	2	Peanuts	2	Cassava	2
11.	Bitter Balls	2	Kolanuts	2	Peanuts	2
12.	Palm Oil	1	Bitter Balls	2	Okra	2
13.	Peanuts	1	Bitter Leaf	2	Sweet Potato	1
14.	Corn	1	Palm Nuts	1	Coffee	1
15.	No 1st choice	10	Beans	1	Beans	1
16.			Palm Oil	1	Pawpaw	1
17.			Rubber	1	Grapefruit	1
18.			Sweet Potato	1	Palm Nuts	1
19.			Eddo	1	Bitter Leaf	1
20.			No 2nd choice	39	No 3rd choice	104
	Total	315	Total	315	Total	315

*Sugar cane includes both sugar cane and cane juice.

TABLE 8

Weighted Scores of Income-Producing Crops

	Crop	Total Score	Per cent of Total
1.	Coffee	593	35.3
2.	Sugar Cane/Cane Juice	425	25.3
3.	Cocoa	271	16.1
4.	Rice	111	6.6
5.	Oranges	63	3.7
6.	Plantains	61	3.6
7.	Banana	50	3.0
8.	Kolanuts	21	1.2
9.	Okra	20	1.2
10.	Bitter Balls	13	0.8
11.	Palmnuts	9	0.5
12.	Peanuts	9	0.5
13.	Cassava	6	0.4
14.	Palm Oil	5	0.3
15.	Bitter Leaf	5	0.3
16.	Corn	3	0.2
17.	Beans	3	0.2
18.	Sweet Potato	3	0.2
19.	Eddo	2	0.1
20.	Rubber	2	0.1
21.	Grapefruit	1	0.1
22.	Cattle	1	0.1
23.	Pawpaw	1	0.1
	Total	1,678	99.9

What is indicated by Tables 7 and 8 is that the farmers in the Kissi area derive most of their income from coffee, sugar cane/cane juice, and cocoa because these three crops together account for a little over 76% of the source of their income. This means that a little over three-quarters (3/4) of all their incomes come from these three crops or crop-products. It is significant that even though rice is grown by nearly 96% of the farmers as opposed to 88% who grow sugar cane or produce cane juice and another 88%

who grow coffee and about 70% who grow cocoa, these crops ranked much higher than rice in providing the farmers with their income.

Several factors account for this lower rank of rice in providing income for the farmer and we will explore some of these factors.

One of these factors had been mentioned earlier. It is that most of the farmers grow their rice primarily to eat and to feed their families--rather than to sell. Selling is quite secondary to eating. When the farmers were asked whether they grow their rice primarily to sell or to eat, 97% of those who grow rice said that they grow their rice primarily to eat and feed their families and only 3% said they grow rice mostly to sell.

The significantly large proportion of the farmers who grow rice primarily to eat and to feed their families raises a further question: "Why do they grow rice only to eat?" One answer to this question lies in culture. Rice is the main staple food of the Kissi and they eat it about two or three times a day. It thus constitutes the major food item and therefore selling it is only secondary. This unwillingness to sell is further reinforced by the fact that the accumulation of rice (not the money rice can bring) in the bins represents for the Kissi a sign of wealth and prestige. To say that a person has two or three or more huts full of rice in the ceiling is to acknowledge the person's

wealth and also his prestige and hard work. This in part accounts for the 97% who grow rice mostly to eat and feed their families than to sell.

Another answer to the question lies in the fact that the quantity of rice produced is generally sufficient just to feed themselves and their families and to take care of their customary obligations like carrying rice to the Paramount Chief or clan chief. What is left over for sale after all these is not much even though our estimates show that about two to three bags of rice (100 lb. bags) are usually left over from one season to the next. The rather small quantities left over which could be sold is the result of several factors such as the size of the farms which limits the amount produced, the techniques of farming, general problems in farming and even the price of rice. We will briefly discuss these factors.

1. Farm size: The average farm size is small and capable of producing just enough for the family. The average farm size is about 3.1 acres or 132,856 square feet which is about 2.4 acres less than the average acreage of 5.5 acres for rice farmers in the country.[6] In terms of the actual distribution, about 65% of the farmers have less than 2.5 acres. Table 9 shows the distribution.

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[6]Annual Report: Department of Agriculture 1969 op cit p. 35.

TABLE 9

Rice Farm Size of Kissi Farmers

	Size of Farm	Per cent	(No.)
1.	0 - 99,999 sq. ft.	65.4	(206)
2.	100,000 - 199,999 sq. ft.	12.4	(39)
3.	200,000 - 299,999 sq. ft.	11.8	(37)
4.	300,000 - 399,999 sq. ft.	4.1	(13)
5.	400,000 - 499,999 sq. ft.	1.6	(5)
6.	500,000 - 599,999 sq. ft.	1.9	(6)
7.	600,000 - 699,999 sq. ft.	1.9	(6)
8.	700,000 - 799,999 sq. ft.	0.3	(1)
9.	800,000 and above sq. ft.	0.6	(2)
	Total	100.0	(315)

Mean Farm size = 132,856 square feet or 3.05 acres.

It should be pointed out that not all the farm area is used for the cultivation of rice. Other crops such as eddoes, cassava etc. are also grown on or around the farm. Our very rough estimates taken from "hamper" calculations indicate that the farmers produce an average of 500 - 600 lbs. of clean rice per acre. When this is converted to 100 lb. bags, it is about 15 - 18 bags per farmer per planting or harvesting season. The production per acre appears to be almost double the average for the country of about 360 lbs.[7]

However, the 3.1 acres do not represent the total farm holdings of the farmers as a number of them have, in addition to their rice farms, cocoa, sugar cane, coffee and

[7]Annual Report: Department of Agriculture 1969 op cit p. 35.

other farms which are grown primarily for cash. These cash-crops are of great importance to the farmers in providing the needed cash to purchase other goods. This is evidenced by the fact that when the farmers were asked what they do after planting and/or harvesting their crops, about 58% said that they attend to their coffee and/or cocoa farms and 32% said they attend to their sugar cane farms. About 6% take to carpentery or other odd jobs and only 4% said they do nothing except participate in cultural activities or take a rest.

Without the necessary technical skills and equipments, the size of the rice farm is a limiting factor in the amount of rice that can be produced.

To a farming people, land is an important factor of production in addition to being invested with a great deal of sacredness. It was therefore not surprising that we found considerable resentment against the Liberian Produce Marketing Company (LPMC) especially in the villages surrounding the LPMC rice project. Farmer after farmer, and especially in Maa, complained of how he had been dispossessed of his land. They also complained that LPMC had originally promised to employ people from the surrounding villages to work on the project but had gone back on their word and had imported people from other villages and even from other tribes. We had neither the time nor the means to explore this further. The fact however remains that there is a deep-seated resentment

among these people against LPMC. Land, to these people is sacrosanct and the attachment to it is almost religious. It stands to reason that extreme care must be taken in dispossessing them of their land and projects like LPMC, even though they lead to greater rice production, should not be foisted on the people without the necessary safeguards and without making sure that their livelihood is not jeopardized. We would further recommend that the establishment of such projects should always be preceded by an anthropological or sociological study which would identify the problems and find meaningful solutions to them.

2. Techniques of Farming: The size of the farm is not the only problem. There is also the problem of the techniques used in farming. Practically all the farmers use cutlasses and hoes and a few other digging implements. We did not find any farmer that used insecticides or pesticides. The tools that are used are very few and practically all the farmers used very simple methods of farming that have been handed down from generations past. The small size of the rice farms coupled with the use of rather unsophisticated tools and techniques leads to low yields. There is need for improvement in this area particularly the adoption of new and modern tools and techniques. The farmers, we found, are not averse to change, in fact, they welcome it as will be shown later in this report.

3. General Farming Problems: This is related, in part, to the problems of the techniques of farming. Most of the farmers expressed grave concern about the problem of pests. Under the rubric of the general problems in farming, we will discuss several problems such as pests, the role of political functionaries, the processing of the rice and the lack of manual help.

(a) Pests: Pests constitute one of the gravest problems for the farmers. Those who cultivate upland rice complain of ground-hogs, birds and other insects that destroy their crops. To substantiate this, a number of the farmers showed us large areas of their farms that have been destroyed by ground-hogs. Swamp-rice farmers, on the other hand, complain of annelid worms especially the hirudinea or leeches as they are generally known. Their main complaint is that these leeches suck their blood and cause them to suffer from all kinds of ailments. Many of the farmers gave the presence of leeches in the swamps as the main reason for not wanting to concentrate on or increase their swamp-rice farming. The significant role of these pests in deterring farming is borne out by the fact that most of the farmers gave pests as the thing they dislike most about farming. Generally, the farmers were asked: "What things don't you like about farming." The distribution of the responses to this question is given on Table 11.

TABLE 11

Things Farmers Dislike About Farming

Things Disliked	Per cent	(No.)
Pests	57.8	(182)
Hard Work	13.6	(43)
No Money	5.1	(16)
Too Dangerous	4.4	(14)
Others	4.8	(15)
Nothing (Dislike Nothing about Farming)	14.3	(45)
Total	100.0	(315)

Table 11 shows that nearly 58% of the farmers gave pests as the most disliked thing about their farming. If we exclude the 45 farmers who have nothing to dislike in farming, pests constitute nearly 67% of all the things disliked about farming. This points up the seriousness of the pest situation. In addition to depleting the resources of the farmers, pests have the potential of demoralizing the farmers. Apparently seeing no way out of the pest problem, a number of the farmers told us that they were not much interested in producing more rice and were mainly concerned with producing enough to feed themselves and their families. Since they are unable to destroy the pests they told us that they just pray so that the pests will leave enough for them to eat. The inability of the farmers to cope with the pest problem in rice also, in part, accounts for the increase in the farming of cocoa, coffee, sugar cane and other cash crops.

(b) Political Functionaries: The role of political and administrative functionaries in inducing farmers not to produce more rice is an important one and should not be underestimated. Many of the farmers complained of how local agricultural officers, police officers, soldiers, county and local administrative officers and other functionaries have come to their villages to demand rice, chicken, goats, etc. Not to accede to the demand of these functionaries was to incur their displeasure and their displeasure could lead to imprisonment, loss of property, heavy taxes etc. In the course of our two months research, we documented ten such cases. Only in one case were we successful in preventing the wanton exploitation of the farmers and this was only after we succeeded in convincing the soldier and his group to go to the next village as we were taking care of "government palavar" with the villagers.

This is a very serious problem and if the farmers are to be encouraged to produce more rice to feed the whole population, then the problem of the functionaries must be looked into and rectified. One farmer's feelings express the general mood of the Kissi farmers and we attempt here to reproduce what he said after we had successfully diverted the soldiers.

> If I grow cocoa or coffee, they (the functionaries) will not take it because they will have to sell it to get the money and they do not want to do that. They cannot eat cocoa or coffee. Rice, yes, they will take it because all they have to do is eat it or give it to their girl friends. You see why I don't like to grow

too much rice? It is hard work and it is small and then someone comes and takes part of it. So, I grow more coffee.

(c) Rice Processing: The farmers still use the same old and wasteful process for the rice. The rice is cut from the farm and then brought to the village to be dried on the ground. During this process some of the rice is lost as they are either eaten by birds or other domestic animals and some just fall on the ground and get lost. The threshing of the rice is done by beating it or more commonly by stamping on with the feet. Quite a lot of rice is wasted by this method of threshing. Then the rice is beaten with a pestle in a mortar. This has a tendency of breaking the rice into small pieces and then some of it is wasted on the ground. After beating it in the mortar, the rice is then fanned in order to take off the waste. Our rough conservative estimate from our observation in the field is that from the time the rice is harvested to the time it is cleaned and ready to be eaten or sold about 15 - 20% of it is lost. Better rice processing methods can thus increase the annual production by the amount lost or in actual terms increase the annual production by about 3 - 4 bags (100 lb. bag) of rice which could then represent a surplus for sale. If this can be done, we would only need about 20,000 to 26,000 farmers to take care of the increase of 80,000 bags of rice imported into the country.

(d) Lack of Manual Help: The farmers complained that they do not have helpers on their farms. There are two problems in this area. The first is that of finding helpers because Guineans who used to come across the border to help on the farms are less willing to come over and even when they do come across, they now demand higher wages. The second problem deals with the availability of money to pay the workers. Most of the farmers said that they do not have enough money to pay the higher wage demands of the workers. On the whole, we found that the average number of helpers on each farm is about 3 (three) including the farmer himself.

We, however, do not consider this a very serious deterrent to increased production because, considering the size of the acreage farmed additional inputs of labor could lead to diminishing marginal productivity and therefore increased cost of production which, as it is, the farmers can ill afford.

4. Price: Added to all the problems mentioned above is the fact that the farmers do not feel that they are receiving an adequate price for their rice. This "adequate price" is not only in terms of the actual cash value of the rice but also in terms of the factor inputs that go into the production of rice. Many of the farmers said that in terms of the man-hour input in rice cultivation vis-a-vis other crops, such as

cocoa, coffee or sugar cane, they get far less from rice than from these other crops. Rice cultivation, they said, is hard and time consuming and that they can spend less time and put less effort into producing cocoa or coffee and still get more from these other crops. According to their estimates, they get about $10 - $12 per 100 lb. bag of coffee and about $8 - $10 per 100 lb. bag of cocoa which are significantly more than the $3 - $5 they receive for a 100 lb. bag of rice. These prices and the general trend in the shift from rice cultivation to cocoa and coffee cultivation are borne out by the Economic Survey.[8] According to the Economic Survey, the monopolistic LPMC bought the following crops at the following prices:

(a)	Robusta Coffee	@	$21.20	per	100	lb.	bag
(b)	Liberica Coffee	@	20.95	"	"	"	"
(c)	Cocoa	@	18.99	"	"	"	"
(d)	Palm Kernels	@	4.92	"	"	"	"

Since most of the farmers sell their produce through middle-men who are, in the main, Lebanese, we can see not only the huge profits these middle-men make but also the approximate prices that these crops can fetch in the market. It is not surprising therefore, that the farmers would want to shift to the cultivation of these crops whose cultivation, as they see it, involves less attention and work and yet brings in more income.

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[8]Economic Survey 1968 op cit pp. 77-79. We have here converted the figures on Table 7.5, 7.6 and 7.7 into simpler terms.

The shifting trend from rice cultivation to an increased cultivation of coffee and cocoa among the Kissi is also reflected in the Economic Survey[9]. Payments to cocoa farmers increased by 203.9% between 1965/66 and 1967/68. The amount of cocoa bought also increased by 72.1% during the same period. The amount paid to coffee farmers, however, declined by about 45.6% between 1965/66 and 1967/68 while the quantity of coffee bought during the same period declined by about 50.3%. Even though both the amount paid and the quantity of coffee sold declined from 1965 to 1968, it is our assumption that this decline was brought about by fluctuating coffee prices and by the large producers of coffee in Liberia who cultivate mostly the robusta coffee. Supporting our assumption, in part, is the fact that the quantity of Liberica coffee which is mostly grown by the local farmers, increased by about 16.1% from 1965 to 1968. It is hoped that the August 1970 conference in Britain of coffee growing countries may come up with significant recommendations for the stabilization of coffee prices and quantities of coffee produced.

Generally then, price plays an important role in determining which crops the farmers will grow or where they will place their emphasis in cultivation.

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[9]Economic Survey 1968: op cit pp. 77 - 79.

SUMMARY

In summarizing this section, the significant fact that emerges is the unwillingness of the farmer or his inability to produce more rice under existing conditions. This unwillingness or inability is actuated by several factors. The farmers generally grow rice primarily to eat and feed their families and also because of certain symbolic cultural factors that attach to the production of rice for domestic or family consumption. Another factor is the size of their farms which are not only small but are also infested with pests of varying kinds, the most important being leeches, ground-hogs and birds. Their farming techniques are simple and unsophisticated and so also are their processing methods which are both simple and wasteful.

Added to these is the problem of political and administrative functionaries who, by demanding rice and other things from the farmers, help to deplete the resources of the farmers. The solution to this particular problem is, in some cases, far more important than the others which are primarily technical in nature and can be handled by better planning and more efficient utilization of available resources. If political and administrative functionaries and in particular extension agents who are supposed to be helping the farmers to adopt newer and better methods in order to increase their production, alienate the farmers they are supposed to help by demanding

rice and other things, then a very serious problem is posed for the country and an urgent solution must be found to curb this type of wanton exploitation.

Finally, there is the price problem since the farmers feel that their financial rewards from rice production are far less than their input into its production. One way of solving the price problem is for the government to abandon the pegging of imported rice prices and allow supply and demand forces to take full effect. Our thinking here is that such a free market condition will allow the price of imported rice to go up so prohibitively high as to induce demand to shift to locally produced rice. As the demand for locally produced rice increases, the price per bag will also increase, assuming a particular level of supply, and will have the effect of inducing farmers to produce more rice to take advantage of the increased prices. As long as the farmer feels that he is being inadequately compensated for his labor and other inputs, he will not be induced to produce more except in a few circumstances where he has to pay taxes or go to the hospital or needs money to purchase manufactured goods. And even these can be taken care of by an increased production of or a shift to, other cash crops like coffee, cocoa and sugar cane.

Most of the farmers in the Kissi area generally produce enough rice to feed themselves and their families and to

induce them to produce a surplus for sale there has to be an adjustment in the price structure of locally grown rice. Our feeling is that this adjustment can come about with a removal of the pegging of imported rice prices.

The factors that were presented above constitute grave and menacing barriers to an increased production of rice in Liberia. If they are not removed or drastically curtailed, we could look forward to a drastic shift to the cultivation of other cash crops such as coffee and cocoa and a decline of even the rice that is currently available for sale. The farmers themselves are not averse to the removal of these barriers. Indeed they welcome change and change that will come fast enough as the next section will show.

It should be pointed out that the farmers do sell some rice but the amount sold constitutes, according to our estimates, only about 12% - 15% of the total produced. This figure can easily be increased by merely improving the processing techniques so as to curtail and reduce the amount of wastage. In this respect, cooperatives can be of tremendous value in providing a simple threshing machine that can be used by a village or a group of villages. Such simple tools can go far in improving and increasing rice production.

The next section will discuss the attitudes of the farmers toward farming and also toward change.

3.3 Attitudes of Kissi Farmers

Commitment to Farming

Most of the farmers appear to be committed to farming and would want to continue farming. One of the two approaches we used to tap the commitment of the farmers to farming was to ask them to indicate if they would want to be farmers were they to live their lives over again. The specific question was: "If you were to live your life all over again, would you like to be a farmer?" 84.4% (266) said yes they would be farmers and 15.6% (49) said no.

For those who said that they would not like to be farmers if they were to live their lives all over again, we tried to probe their reasons for wanting to leave farming and what type of work they would want to do. Tables 12 and 13 give the distributions.

TABLE 12

Reasons for not Wanting to be a Farmer

Reasons	Per cent	(No.)
Farming is too hard	42.9	(21)
No money	22.5	(11)
Want more education	22.5	(11)
Farming too dangerous	12.2	(6)
Total	100.1	(49)

Table 12 shows that nearly 43% of those 49 farmers who would want to leave farming want to do so because of the difficulties of farming. About 22% said they do not get enough money from farming and the same per centage said they want more education. About 12% thought that farming is too dangerous. Actually about 55% gave as their reason for wanting to leave farming the difficulties involved in farming i.e. including the dangers involved. Subsumed under the difficulties involved in farming are problems of pests and the lack of efficient tools.

TABLE 13

Type of Work Farmers who would leave Farming would do

Type of Work	Per cent	(No.)
Technical work	49.0	(24)
Go to school	32.7	(16)
Clerical work	8.2	(4)
Become a chief	6.1	(3)
Go into business	2.0	(1)
Have other type of farm	2.0	(1)
Total	100.0	(49)

It can be seen from Table 13 that nearly 50% of those who would want to leave farming would like to go into some technical work. About 33% would want to go to school. It may be assumed that those who would like to go to school would most likely want to end up in some technical work. The 6% (3) who would want to be chiefs gave as their reason the fact that

such a position would give them the prestige and benefit which would make it possible for others to work for them on their farms.

In order to probe their basic commitment to farming, a second approach was used. This consisted of a battery of four scaled attitude tests. A five-point scale was set up for each test and the scale ranged from strongly agree, agree, neutral, disagree to strongly disagree. The four items tapping the dimension of their commitment to farming are:

(a) If I have enough money, I will leave farming.

(b) Farming is the most important thing in my life.

(c) I want my son to be a farmer like me.

(d) If I find something else to do, I will leave farming.

The raw responses are tabulated in Table 14.

TABLE 14

Attitude Toward Farming as Indicated by Answers to Four Scaled Attitude Questions

Response Pattern	Questions (per cent and No.)							
	a)*		(b)		(c)		(d)	
	%	(No.)	%	(No.)	%	(No.)	%	(No.)
1. Strongly agree	38.4	(121)	47.0	(148)	19.4	(61)	20.6	(65)
2. Agree	30.8	(97)	43.5	(137)	33.3	(105)	35.2	(111)
3. Neutral	7.3	(23)	4.4	(14)	21.9	(69)	21.3	(67)
4. Disagree	5.7	(18)	2.9	(9)	13.6	(43)	13.3	(42)
5. Strongly disagree	17.5	(55)	1.6	(5)	4.4	(14)	7.9	(25)
6. Don't know	0.3	(1)	0.6	(2)	7.3	(23)	1.6	(5)
Total	100.0	(315)	100.0	(315)	99.9	(315)	99.9	(315)
Mean = X =	3.64		1.68		2.47		3.48	
Grand Mean =	2.83							

*The scores for (a) should be reversed to get an accurate scale i.e. 1 should be 5, 2 should be 4, 3 should be 2 and 5 should be 1. Three remains the same.

Table 14 shows that the farmers are committed to farming but weakly so. Their mean commitment score is about 2.8. Their commitment to farming which is rather weak may be indicative of the general problems they have in farming which have been documented earlier. On the other hand, if we collapsed the categories by taking the scores of 4 and 5 of (a) and combined them with the scores of 1 and 2 of (b), (c) and (d), and further combine the scores of 1 and 2 of (a) and combine them with 4 and 5 of (b), (c) and (d) and leave the scores of 3 as they are we would get a distribution as shown on Table 15.

TABLE 15

Collapse Attitude Scores on Commitment to Farming

Response Pattern	Per cent (No.)
1. Strongly agree/agree	55.6 (700)
2. Neutral	13.7 (173)
3. Strongly disagree/disagree	28.3 (356)
4. Don't know	2.5 (31)
	100.1(1260)

Table 15 confirms the pattern found on Table 14. From Table 15 we find that about 56% are fully committed to farming which is slightly above the 50% mark. Thus we find again, as on Table 14, that the farmers are generally committed to farming but their commitment is weak. About 14% are neutral in their commitment and about 28% are not

committed to farming. 2.5% do not know or that the questions were not applicable to them such as (c) for people who do not have any children.

Commitment to Change:

In order to explore their attitude toward change, three basic areas were examined. The first area deals with the general improvements they would like to make on their farms; the second deals with their specific attitude toward the pace of change; and the third area deals with a scaled attitude test toward change.

(a) General Improvements in Farming: The farmers were asked to indicate what general improvements they would like to make on their farms so as to produce more rice. The responses to this question are shown on Table 16.

TABLE 16

General Improvements on Farm that Farmers would like to Make

Improvements	Per cent	(No.)
Better techniques	27.9	(88)
More land	22.2	(70)
Control pests	17.5	(55)
Better implements	7.9	(25)
More workers	5.4	(17)
More money	2.6	(8)
No improvements	16.5	(52)
Total	100.0	(315)

Table 16 shows that only about 16% do not want any changes or desire any improvements on their farms. Thus a little over 83% want some improvements or change on their farms. Of the 315 farmers in our sample, nearly 28% want better techniques, 22% want more land to plant, and a little over 17% want the pests to be controlled or totally eliminated. It is significant that only about 3% mentioned money as a means of improving their farms and only about 5% mentioned helpers on the farm. This last finding bears out our earlier contention that an increase in the number of helpers on the farm did not appear to be a crucial factor particularly when diminishing marginal productivity is taken into consideration.

(b) Pace of Change: After asking them to indicate whether or not they wanted changes on their farms, the farmers were then asked how fast they think basic changes in farm practices should come. This question was scaled from very fast, fast, slowly to very slowly. The pattern of the responses to this question is shown on Table 17.

TABLE 17

Rate at Which Farmers Want Change

Rate	Per cent	(No.)
Very fast	43.8	(138)
Fast	34.3	(108)
Slowly	14.3	(45)
Very slowly	0.6	(2)
Don't know	7.0	(22)
Total	100.0	(315)

Mean = $\bar{X}$ = 1.7

About 78% of the farmers want changes to come very fast or fast and only about 15% want it to come slowly or very slowly. The mean rate of change desired by the farmers is 1.7 which indicates that, on the whole, the farmers want changes to come fast. Kissi farmers, by and large, are open to change and even welcome it and this fact should be borne in mind in all attempts at extension work. It is our contention that if changes are forthcoming and soon, they will have the effect of offsetting the relatively weak commitment to farming mentioned earlier. All indications point to the fact that the farmers in the Kissi area want change.

(c) Scaled Attitude Test Toward Change: In order to explore further the attitude to change, an attitude index was constructed. The index consisted of six items each of which was scaled on a five-point scale from strongly agree to

strongly disagree. The six items which were framed as questions are:

(i) I want to live like my forefathers did.

(ii) I am willing to use a better way of farming.

(iii) I will use this better way even if other villagers do not like it.

(iv) I will use this better way even if it is against our custom.

(v) I want to learn new things.

(vi) The world is changing and we must all change with it.

Answers to these six scaled questions provided the index for measuring the attitude of the farmers toward change. The responses to these questions and the attitude scores are given on Table 18. To get an accurate index, the scores for question (i) should be reversed so that the farmer who would very much like to live like his forefathers would score 5 instead of 1; the farmer who agrees to this question, but not strongly, would score 4 instead of 2; those who are neutral would score 3; those who disagree with the statement would score 2 instead of 4 and those who disagree very strongly would score 1 instead of 5. When the scores to question (i) are thus reversed a rigorous index will be produced. On Table 18, SA stands for strongly agree, A for agree, N for neutral, D for disagree, SD for strongly disagree and DK for don't know.

TABLE 18

Attitude toward Change as Indicated by Answers to Six Scaled Attitude Questions

Response Pattern	Questions (% and No.)					
	(i) % (No.)	(ii) % (No.)	(iii) % (No.)	(iv) % (No.)	(v) % (No.)	(vi) % (No.)
1. S.A.	6.4(20)	54.9(173)	31.4(99)	15.6(49)	36.8(116)	25.1(79)
2. A.	9.8(31)	41.3(130)	38.1(120)	30.8(97)	56.2(177)	67.0(211
3. N.	16.8(53)	2.5(8)	21.0(66)	40.0(126)	4.1(13)	4.8(15)
4. D.	40.6(128	0.6(2)	8.3(26)	9.8(31)	1.3(4)	1.3(4)
5. S.D.	26.4(83)	0.6(2)	0.9(3)	3.2(10)	0.9(3)	0.9(3)
6. D.K.	0.0(0)	0.0(0)	0.3(1)	0.6(2)	0.6(2)	0.9(3)
Total=	100.0(315)	99.9(315)	100.0(315)	100(315)	99.9(315)	100.0(315
Mean=	3.7	1.5	2.1	2.5	1.7	1.8

Grand Mean = 2.2

What is immediately apparent on Table 18 is the strong commitment to change that the Kissi farmers have. Their attitude to change is very positive as indicated by the mean attitude score of 2.2. This is further indicated by the fact that the composite index shows a strong attitude and commitment toward change. This is shown on Table 19.

TABLE 19

Per cent Responses on Composite Index of Attitude Toward Change by Kissi Farmers

Response	Per cent (No.)
Strongly agree	28.5 (536)
Agree	40.7 (766)
Neutral	14.9 (281)
Disagree	10.4 (195)
Strongly disagree	5.5 (104)
Total	100.0 (1882)

The major finding from Table 19 is that nearly 70% of the farmers are in favor of change in farming. About 15% are neutral and only about 16% are not in favor of change of any kind. Generally then, our study found the Kissi farmers to be quite receptive to change and would also want the pace of such changes to be fast. This is in consonance with the findings of the study reported in the Annual Report of the Department of Agriculture which states: "In areas where new farming methods have been taught rice farmers, they have shown a certain keenness in adopting these methods...."[10] Even though their commitment to farming is slightly weak i.e. not as strong as their commitment and attitude to change, their enthusiasm for change can easily compensate for this if innovations in farm practices are introduced and introduced fast and soon

[10] Annual Report: Department of Agriculture 1969 op cit p. 37.

enough. Indeed, their enthusiasm for change is evidenced by the fact that about 91% of the farmers said that they would be willing to participate in bringing these changes about and making them work. Only about 2% said that they will definitely not participate in such changes and about 7% have no idea what they would do. This strong desire for change should be seen in the light of the difficulties the Kissi farmers encounter in trying to be good providers for their families and also to be productive participants in a growing and expanding economy.

Further Analysis of Attitudes Toward Farming and Change.

Our analysis did not end with an assessment of general attitudes toward farming and innovation. Since we have a fairly good scale and a theoretically structured index, we decided to explore further the relationship between the two variables i.e. attitude to farming and attitude toward change. A Pearson's Product Moment Correlation produced a correlation coefficient of +.242 which when converted to a t-score gave a t of 4.4 which is significant at the .001 level of probability.

What this means is that as attitude toward change and innovation increases positively, so does the commitment to farming. That is, as commitment to change increases the commitment to farming also increases. To put it differently, those who are committed to farming are precisely those who want change. This bears out our earlier contention that

changes in farming will produce greater commitment to farming.

We consider this to be a significant finding as it directs attention to the significance of introducing change in the farming practices of the Kissi.

The four items that make up the commitment to farming index and the six items that make up the attitude to change index appear to be extremely significant because we obtained significant internal correlations when each item on the farming commitment index was correlated with each item on the attitude to change index. In order to make sure of this internal consistency of the items, both chi-square and correlational analyses were utilized and at each point the items came out significant at the p .05 level except between item 3 of the attitude toward farming and item 4 of the attitude toward change which is significant only at the p .09 level. Thus, the attitude toward farming or commitment to farming is highly correlated with attitude toward change and an increase in one will produce a corresponding increase in the other. The best way of bringing about a greater commitment to farming as indicated by the direction of the relationship and the variables, is to introduce change or to bring it about in the quickest and most parsimonious way.

SUMMARY

Kissi farmers generally like farming as indicated by the fact that about 84% of them would want to be farmers if they were to live their lives all over again and only 16% said that they would not like to be farmers were they to live their lives all over again. However, in terms of their basic commitment to farming, we found that about 48% are deeply committed to farming, while about 38% are not and 14% are neutral or weakly committed. The mean commitment to farming on a five-point scale was 2.8 where 1 is the greatest possible commitment and 5 the least possible commitment. Their commitment to farming is about midway or may be considered as moderate commitment to farming.

On the other hand, the farmers are by and large highly committed or oriented to change as evidenced by the fact that 78% want change to come fast or very fast and only 15% want it to come slowly or very slowly. About 7% have no clear opinion on the matter. In terms of their commitment to change, about 70% are deeply committed to change and only about 16% are not committed at all to change and about 15% have no clear opinion on the matter or are neutral. The mean commitment to change on a five-point scale (1 representing the highest pissible commitment and 5 the lowest possible commitment) is 2.2. What all these indicate is that there is a strong

inclination among the Kissi toward change in farming practices. This is further strengthened by the fact that nearly all of them (about 91%) said that they will be willing to participate in these changes in one way or another.

The conclusion that we drew from the whole situation is that Kissi farmers moderately committed to farming but are strongly committed to change. Their moderate commitment to farming may be due in part to the numerous difficulties they face in farming and the crude techniques they use. Since, however, they have a rather strong commitment to change, if changes come and come about fast, they will have the effect of increasing the commitment to farming of the farmers. This greater commitment to farming that we envisage with changes in farming, may not necessarily be in rice farming if nothing is done about domestic rice prices and they continue to lag significantly behind coffee and cocoa prices and if the other difficulties in rice cultivation that we mentioned are not removed. One way of doing this, as we mentioned earlier, is to remove the pegging of foreign rice prices and allow supply and demand factors to take their course. This, in our judgment, will let the price of imported rice go up so high as to induce demand to shift to local rice. This demand shift resulting in greater demand for local rice will increase the price of locally grown rice and thereby induce the farmers to produce more for the market. In saying this, we are not unaware of

the possibility of a backward-bending supply curve, i.e. where with increased income as a result of increased prices the farmers will not increase supply but earn increased incomes and spend their spare time on other crops. Our assumption however, borne out by the situation in the Kissi area with which we are familiar, is that the phenomenon of a backward-bending supply curve will not occur. Rather, the result of price increases will be greater production and increased supply bearing in mind however, the limits set by Engel's law on the expenditures on agricultural products with general increases in incomes. If this limit is taken into account as well as the general socio-cultural conditions in the Kissi area particularly the attitudes of the farmers toward change, the possibility of a backward-bending supply curve may be discounted.

4. Other Sundry Findings

Income: The Kissi farmers make about $4.25 per month. The mean annual income of the farmers is about $51.50 and their mean annual expenditure is about $28.00 which leaves an annual net income or net profit of about $23.50. This does not include rent on land which could not be computed because of the land tenure system and wages for labor they put into their farms. If these were computed and included in the expenditures, the resulting net profit will be negligible. Tables 20, 21 and 22 show the patterns of income and expenditure distribution.

In order to tap the consistency of responses on incomes, two separate questions on annual income were asked. These two questions were asked considerably apart in the questionnaire so as to eliminate a "halo" effect. Question 41 asked for income at the end of the last harvest and Question 78 asked for annual income "last year." Tables 20 and 21 show the responses to these two questions.

TABLE 20

Annual Income of Farmers (Question 41)

Income	Per cent (No.)
1. Below $20	14.9 (47)
2. $20 - 39	26.3 (83)
3. $40 - 59	17.5 (55)
4. $60 - 79	8.6 (27)
5. $80 and above	28.2 (89)
6. Don't know	4.4 (14)
Total	99.9 (315)

Mean Income = $\bar{X}$ = $51.40

TABLE 21

Annual Income of Farmers (Question 78)

Income	Per cent (No.)
1. Below $20	15.2 (48)
2. $20 - 39	21.6 (68)
3. $40 - 59	19.4 (61)
4. $60 - 79	9.2 (29)
5. $80 and above	26.0 (82)
6. Don't know	8.6 (27)
Total	100.0 (315)

Mean Income = $\bar{X}$ = $51.50

The identical mean income scores indicate a great consistency in the responses and also attest to the honesty with which the questions were responded to. They also attest to the seriousness the farmers attached to the whole questionnaire and the honesty and faithfulness with which all the questions were answered.

The mean annual expenditure of the farmers is about $28.00 leaving them a net profit of about $23.50 as Table 22 shows.

TABLE 22

Annual Expenditure of Farmers

Expenditure	Per cent	(No.)
1. Below $20	31.4	(99)
2. $20 - 39	20.0	(63)
3. $40 - 59	6.4	(20)
4. $60 - 79	3.5	(11)
5. $80 and above	4.4	(14)
6. Don't know	34.3	(108)
Total	100.0	(315)

Mean Expenditure = $\bar{X}$ = $28.00

Net Profit = $23.50

The farmer thus has about $23.50 left after food, clothing, school fees, payments to workers, bride price, taxes etc are taken care of. Most of this net profit is buried in the ground or hidden away in cups or other "useful" containers since there are practically no avenues for savings in this area.

This brings up another crucial need in this area. In addition to helping the farmers to farm and market their produce, a cooperative will be extremely useful in garnering the savings which could then be invested in more productive and income-generating areas. The national economic interests are not served when these monies lie burried or hidden in dark, unproductive and non-interest producing corners.

It is significant of note that according to the Annual Report of the Department of Agriculture[11] only two cooperatives are established and functioning in the Loffa County area. These are the Konneh Dukuly Cocoa Producers Cooperative Society and the Coffee Hullers Cooperative both of which are in Kolahun. As can be seen, none of these cooperatives deals with rice. If the increased production of rice and its better marketing are key issues in the whole concept of "Operation Production" then the establishment of rice cooperatives is an imperative adjunct to the whole process.

In establishing such cooperatives among the farmers, extreme care must be taken in enlisting the active cooperation of the farmers. Concerted efforts must also be made in allaying their fears that such cooperatives will not lead to their greater exploitation or to heavier taxes or even to the misappropriation of their hard earned monies by the

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[11] Annual Report: Department of Agriculture, R.L. op cit p. 38.

functionaries of the cooperatives. Efforts must therefore be made at the higher levels of the bureaucratic structure to prevent unscrupulous practices and other acts that might endanger the efficient functioning of the rice cooperatives that we are recommending.

When the farmers were asked if they would like to have a rice cooperative established in their area and if they would participate in such a cooperative, 50% said yes and 44% said no and about 6% have no clear opinion either way. The significantly large number (44%) who do not want the establishment of a cooperative in their area underscores the care that must be taken in introducing any rice cooperatives in the area.

The Department of Agriculture is not unaware of the significant role of cooperatives as evidenced by the statement in the Annual Report: "The organizational structure of these units is taking the form of cooperatives and thus far the idea has met with relative success. Plans have been made to assist farmers through these cooperatives in marketing their crops, thus protecting them against exploitation."[12] In spite of this statement two problems remain to be solved--the first is that these cooperatives have in the main, been in the areas of coffee and cocoa and efforts should be made to extend them to include rice. The second is that protecting the farmers

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[12] Annual Report: Department of Agriculture, R. L. op cit p. 37. (emphasis mine)

"against exploitation" has largely been seen by the Department in terms of the role of middlemen. Our contention is that there is also the possibility of potential exploitation by the functionaries of the cooperatives and this too should be prevented or eliminated.

The Department of Agriculture is also trying to strengthen the cooperative movement by training personnel to staff them. We would, however, recommend that in sending personnel for training in the area of cooperatives, an effort should be made to send such personnel to comparable developing areas where the cooperative problems are fairly similar. It does not do much good to send them to advanced countries where cooperatives are not only structurally different but also deal with problems that are not similar to cooperative problems in developing countries such as Liberia.

Attitude Toward Swamp Rice Farming: Even though a significant 91% of the Kissi farmers grow swamp rice exclusively or in addition to upland land, their attitude toward swamp rice cultivation is not whole-hearted support. When the farmers were asked whether their lands were suitable for swamp rice cultivation, 64% said that their lands were not very suitable for swamp rice cultivation; 25% said their lands were suitable and 11% had no clear opinion either way. As was indicated earlier, the strongest reason advanced by the 64% who said that their lands were not suitable for swamp rice cultivation was the presence of leeches coupled with the

ailments they claim to have gotten from these leeches and from wading in the water and mud. If the leeches can be eradicated, many of the farmers will concentrate on swamp rice cultivation. This is evidenced by the fact that of those who grow or have grown swamp rice, 43.4% said that they got more rice from swamp cultivation than from upland cultivation; 38.2% said they got less; 14.6% said that they got about the same amount and 3.8% could not tell whether they got more or less from swamp rice cultivation. The fact that, in spite of the leeches and other attendant problems, a majority of the farmers claimed to have gotten more rice from swamp than from upland rice cultivation is significant for the widespread introduction of swamp rice cultivation in the area. This bears out our earlier contention that if the leeches are eradicated many more of the farmers will shift to or concentrate on swamp rice cultivation.

Factors that Make a Good Farmer: The farmers were asked to indicate what, in their opinion, makes an excellent farmer. The responses are given on Table 23.

TABLE 23

Factors that Make a Good Farmer

Factors	Per cent (No.)
1. Manual help (No. of helpers)	27.3 (86)
2. Hard work	18.7 (59)
3. Size of farm	14.3 (45)
4. Money	5.4 (17)
5. Others	2.9 (9)
6. Don't know	31.4 (99)
Total	100.0 (315)

The farmers consider the number of helpers a farmer has, how hard he works on his farm and the size of his farm as the three most important factors that make him a good farmer. Ideally, the number of helpers a farmer has on his farm and the size of his farm can be separated for purposes of analysis but in reality such a separation can not be sustained for the fact that the larger the farm the greater would be the need for help on the farm and therefore the larger will be the number of helpers he will have.

One significant thing that emerges from Table 23 is the farmers' recognition of hard work as a factor in making one a good farmer. There is an element of the Protestant Ethic here. The farmers are therefore not averse to hard work but rather recognize it as one of the marks of success in farming and in being a good farmer. It is also important to note that only about 5% mentioned money as a factor in making

one a good farmer. It is not that the farmers do not recognize the value of money. They do but they feel that to be a good farmer other things such as having helpers, hard work and the size of the farm are more important in making one a good and successful farmer.

In order to distinguish this from other categories, we asked the farmers to indicate what qualities they see in a man before they call him a "big man" and what qualities a man must possess before he is respected. The distributions of the responses are given on Tables 24 and 25.

TABLE 24

Qualities that Make a "Big Man"*

Qualities	Per cent	(No.)
1. Old age	21.4	(202)
2. Money	17.9	(169)
3. Helpful	16.0	(151)
4. Respectful	10.0	(95)
5. No. of wives/No. of helpers	4.7	(44)
6. Honesty	3.6	(34)
7. Government official	1.4	(13)
8. Others	13.0	(124)
9. No response	12.0	(113)
Total	100.0	(945)

*The farmers were asked to name two qualities in order of importance. The first named quality was then weighted by multiplying it by two and the score of the second named quality was multiplied by one. This was how we got 945 total responses. The same method was used for Table 25.

The responses coincide with traditional African pattern where old age is respected and the "old man" is regarded as the "big man". Thus according to Table 24, old age, money, helpfulness and respectfulness constitute the four most important qualities that distinguish a "big man" from ordinary men.

Table 25 shows the factors that will make the farmers respect a person.

TABLE 25

Qualities that will Make One Respected

Qualities	Per cent	(No.)
1. Respectful	27.5	(260)
2. Helpful	16.7	(158)
3. Reputation	11.6	(110)
4. Old age	8.9	(84)
5. Appearance/dress/comportment	7.5	(71)
6. Material possession/money	6.2	(59)
7. Government official	0.6	(6)
8. Others	10.5	(99)
9. No response	10.4	(98)
Total	99.9	(945)

What Table 25 shows is that if a person is respectful, helpful, has a good reputation and is old he stands the greatest chance of being respected in the community. These four factors, thus, constitute the most important qualities that induce respect for a person.

Pattern of Seeking Aid: The purpose of the set of three questions used here was to identify the most successful farmer in the village from the farmers and then to find out whether the farmers generally go to him for help in farming. We also tried to identify those that the farmers go to if they have personal problems. The three questions are:

(a) If you want to look for help in how to do your farming better, to whom in this village would you go? (They were to give the name of the person).

(b) If you have a personal problem in your farm or in your home, to whom will you go? (Name the person.)

(c) When you consider everything, who, do you think, is the best farmer in this village? (In all three questions they were to identify the persons by name).

The responses to these three questions are tabulated on Table 26.

Table 26

Pattern of Seeking Farming and Personal Aid

From whom aid sought	Per cent	(No.)
1. Best farmer is one from whom farming and personal sought	16.8	(53)
2. Person from whom farming aid is sought same as person from whom personal aid is sought	16.8	(53)
3. Person from whom farming aid is sought same as best farmer	13.0	(41)
4. Person from whom personal aid is sought same as best farmer	9.8	(31)
5. All three person different	42.9	(135)
6. Seeks help from none and considers self as best farmer	0.6	(2)
Total	99.9	(315)

As shown on Table 26, in about 40% of the cases, the aid of the best farmer is sought either in farming or personal problems or both. The implication here for extension workers is quite obvious. In order to introduce change and innovation, those in the villages that are acclaimed as the best farmers must be identified and their aid and cooperation sought in the introduction of such changes. Since four out of every ten farmers go to them for aid of one kind or another, they can become significant linking points for change agents in their approach to the target system. This can assure the greater success of the innovative process.

Table 26 also confirms our observation on the role of the re-migrants in that since they are usually not considered as the best farmers in the community, aid is not sought from them in these matters. Rather, the villagers go to such re-migrants if they have some problems with the government either at the local or central level.

Wives Work (Farming): We found that about 52.8% of the 290 (or 92% of the total number of farmers) who are married do not have wives who cultivate their own separate farms. These only help their husbands on the family farm. The 47.2% of those married whose wives cultivate their own separate farms indicated that in 48% of the cases, the crops from the wives' farms are used mostly to feed the family.

In 52% of the cases, such crops from the farms of the wives are mostly for sale. Most of these "female crops" include bitterballs, bitterleaf, plantains, oranges, okra, eddoes, pepper etc. part of which are consumed by the family but most of which are sold in the market.

It should be pointed out that about 74% of those who said that their wives do not cultivate their own separate farms have only one wife. In a polygynous household, the wives are expected to supplement whatever they get from their husband and this accounts for the fact that about 87% of those whose wives cultivate their own separate farms have more than one wife.

Outside Work: A number of the farmers, in addition to working on their farms also employ themselves or offer their labor outside for additional income. Of the 315 farmers in our sample, about 42% (131) work either occasionally or regularly for other farmers. Of the 131 who get such additional outside work, 109 (82.2%) are paid by cash, 17 (13.0%) are paid by being offered food and 5 (3.8%) are paid by being given land for cultivation. The mean annual income from such outside work is about $14.80. It should be pointed out here that this figure of $14.80 was added to the total annual income of the farmers and, as such, it does not constitute a separate income category.

Some Characteristics of the Brothers and Sisters of the Farmers: The 315 farmers in our sample have a total of 1,178 brothers and sisters. These break down into 614 brothers and 564 sisters. These are brothers and sisters who are living. We did not make any effort to elicit the number of brothers and sisters who have died. Thus each farmer has about 3.7 brothers and sisters or 1.9 brothers and 1.8 sisters. On the other hand, as was shown earlier, the 315 farmers have among them 981 children or 3.1 children per farmer (here we have included even those who have no children who constitute about 12% (37) of the sample of 315 farmers). From these two sets of intergenerational figures we derive a .6 drop in the birth rate in the two generations. This means that the parents of the farmers had more children living than the farmers themselves. When we consider the fact that the mean age of the farmers is about 41 years, we would not anticipate a significant increase in their fertility. There is thus about a one-child-per-family loss or decrease between the generations of the farmers and their parents. Table 27 shows the number of siblings the farmers have and the type of work these siblings are currently doing.

TABLE 27

Current Jobs of Brothers and Sisters of Farmers

Jobs	Male		Female		Total	
	Per cent	(No.)	Per cent	(No.)	Per cent	(No.)
Farming	82.3	(505)	90.1	(508)	86.0	(1,013)
Technical	7.8	(48)	0.2	(1)	4.2	(49)
Clerical	1.3	(8)	0.0	(0)	0.7	(8)
Business	0.8	(5)	3.0	(17)	1.9	(22)
Schooling	3.4	(21)	0.5	(3)	2.0	(24)
Domestic	1.0	(6)	0.0	(0)	0.5	(6)
Housewife	0.0	(0)	3.2	(18)	1.5	(18)
Don't know	3.4	(21)	3.0	(17)	3.2	(38)
Total	100.0	(614)	100.0	(564)	100.0	(1,178)

Most of the brothers and sisters of the Kissi farmers (86%) are in farming and only about 4% are in technical jobs. About 2% are in business and about the same per cent are in school. It is interesting that none of the sisters were listed as being engaged in domestic work while 1.6% (6) of the brothers are engaged in domestic service. The 2% of the brothers and sisters who are attending school is explained by the polygynous system where, because of multiple wives, it is possible to have great age disparities among siblings. The low representation of clerical work (0.7%) can be accounted for by the recency of educational facilities since clerical occupations require more education than technical occupations of the type we are concerned with.

Summary: It is rather difficult to summarize this section since the analysis did not follow any clear pattern. However, we intend to highlight some of the significant findings. One of the findings is that the farmers do have some money left over after every harvesting or selling season. Efforts should be made to garner this surplus for saving and/or more productive investment. We would recommend as an urgent priority, the establishment of rice cooperatives and/or credit unions in this area.

Another important finding is that the farmers are in favor of swamp rice cultivation if the leeches and other ruinous pests can be eradicated from the farms.

Pilot Projects: Even though our research did not cover rice pilot projects, it is important to make some remarks on them as they are set up primarily as demonstration models for the farmers.

Pilot projects like the one in Gbedin are a good idea but they are not and should not be ends in themselves. Rather, they are means to the end of increased rice production. The main rationale for setting up such projects is to demonstrate to the farmers how they can produce more rice or utilize better techniques for increased production. One of the wrong approaches to pilot projects is the one advocated in the Annual Report of the Department of Planning and

Economic Affairs.[13] These projects are carefully planned and carefully controlled with regard to soil conditions, grain varieties, hydrological conditions etc. The flaw here is that most of the farmers do not grow their rice under such carefully controlled conditions. The result is that even though they go to Gbedin or other pilot areas and learn the new techniques, they are unable to apply them effectively on their farms precisely because the controlled conditions at the projects do not exist on their farms and also because they do not have the necessary equipments and technical know-how to make the needed adjustments on their own farms. Thus, the experience at the pilot projects, rather than being beneficial becomes frustrating because they cannot measure up to the expectations of the experimental scheme's experience and that the controlled conditions at these projects are non-transferable.

What is needed, in our opinion, is to carry these experiments right to the farms of the various farmers and work with them there under the conditions that exist on their farms. This will be less frustrating, more related to the experiences of the farmers and therefore has the potential of leading to greater rice production.

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[13] Annual Report: Department of Planning and Economic Affairs 1969, op cit pp. 15 and 16.

THE RICE CRISIS: AN EVALUATION

According to the Economic Survey, "until the money economy began to expand rapidly after 1965, Liberia was self-sufficient in rice; but demand has grown far more rapidly than domestic supply since then. There are as yet no reliable data about total rice production or about production trends, but domestic production appears to be less than double the 50,000 short tons imported during 1968."[14] The Annual Report of the Department of Agriculture echoes this by stating that "presently the Liberian demand for high-quality milled rice cannot be met by local production and therefore, more than 50,000 short tons of rice valued at approximately eight million dollars were imported over the period under review."[15]

These two statements together present a rather grim picture of the rice situation in Liberia. However, a closer examination shows that the demand for imported rice has not increased sharply. What has risen sharply is the value of the imported rice and by implication the price of such rice. We have used Table 7.8 (p. 80) of the Economic Survey but we have expanded it to show the trend in the quantity of imported rice and the price for it. This is shown on Table 28.

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[14] Economic Survey 1968, op cit p. 71.

[15] Annual Report: Department of Agriculture R. L. op cit p. 11.

TABLE 28

Value and Quantity of Rice Imports 1964-1968

Year	Pound	Increase/ Decrease	%Increase/ Decrease	Value ($)	Increase/ Decrease	% Increase/ Decrease
1964	92,368	------	-------	$ 5,012	------	-------
1965	71,644	- 20,724	- 22.4	6,326	+ 1,314	+ 26.2
1966	102,075	+ 30,431	+ 42.5	7,536	+ 1,210	+ 19.1
1967	75,794	- 26,281	- 25.7	6,564	- 972	- 12.9
1968	100,329	+ 24,535	+ 32.4	8,664	+ 2,100	+ 32.0
Total		+ 7,961	+ 8.6%		+ 3,652	72.9%

What is indicated by Table 28 is that while the quantity of rice imported rose by only 8.6% between 1964 and 1968, the value of the imported rice rose by 72.9% during the same period. This means that the price increased by about nine times the increase in the quantity imported. To put it differently, for every unit increase in the quantity of imported rice, there is a corresponding nine units increase in the price.

The increase in the value of imported rice as computed above does not show the real picture since the quantities imported fluctuated from year to year. To get the real situation, we reduced the quantities imported to the price of a single 100 lb. bag of rice. The price fluctuation is shown on Table 29.

TABLE 29

Price per 100 lb. Bag of Imported Rice 1964-1968*

Year	Price	Increase/ Decrease($)	% Increase/ Decrease
1964	$5.43	------	------
1965	8.83	+$3.40	+ 62.6
1966	7.38	- 1.45	- 16.4
1967	8.66	+ 1.28	+ 17.3
1968	8.34	- .32	- 3.7
	Total	+$2.91	+ 53.6%

*This table is extrapolated from Table 7.8 of the Economic Survey 1968 op cit p. 80 by dividing the quantity per year by the value and then computing for a 100 lb. bag.

What is indicated by Table 29 is that the price of a 100 lb. bag of imported rice has fluctuated between 1964 and 1968 but on the overall, the price has increased by about 54% between 1964 and 1968 or put differently, the price for a 100 lb. of imported rice rose by $2.91 between 1964 and 1968. This disproportionate increase in the price of imported rice becomes alarming when we consider the fact that per capita national income has only increased by about 13% between 1964 and 1968[16] as compared to the 54% increase in the price of imported rice. Furthermore, while per capita income increased by 4.8%[17] between 1967 and 1968, consumer prices for the same period increased by a little over 5%[18] thereby vitiating the gains in per capita income and leaving the average citizen a little poorer by about .4%. Viewed in the light of the foregoing, the increases in the price of imported rice are grossly disproportionate.

In actual terms, the demand for imported rice has increased by 8.6% between 1964 and 1968. The quantity increase is about 7,961,000 pounds or approximately 79,610 bags of

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[16] Economic Survey 1968 op cit p. 8 Table 1.3.

[17] Ibid p. 8 Table 1.3.

[18] Ibid p. 66. The figures of 110.4 and 113.9 should be corrected to read 110.7 and 116.4.

rice (100 lb. bags). This increase in the demand for imported rice is not alarming, in our estimation, and can easily be met by local production. By simply improving the threshing methods of the farmers, and inducing them to sell through Government price manipulations, these 79,610 bags can easily be taken care of. Our study leads us to believe that this demand can be met by the Kissi rice farmers alone.

The problem, however, rests more on taste and the prestige attached to eating imported rice than on the availability of local resources in meeting the demand. Viewed in this perspective, the situation does not look as bleak and grim as presented by the Economic Survey and by the Department of Agriculture's Annual Report. This is so if the taste problem can be taken care of and also if the problem of sand can be solved by better processing procedures. Furthermore, this optimistic view can only be sustained if we consider the 1964 level of rice imports as normal.

The picture changes if the intention is to go to a pre - 1964 level and possibly even to have a surplus for export. To do this, the numerous difficulties facing the farmer should be drastically reduced if not completely eliminated. To do this and to do it well will require all the energies of the government and other domestic and foreign agencies.

Our study is, in the main, exploratory but it does point up a number of the problem areas in rice production and

also includes some suggestions for solving some of the problems.

This study concerns only one small section of the entire country and in order to get a more accurate profile of the conditions of rice production in the whole country, the study should be duplicated in many other parts of the country. Only then can the parameters of the problem be fully delimited and more accurate and lasting solutions found.

APPENDIX A

List of Villages in our Sample, Number of Farmers Interviewed, Number of Huts in Village and Name of Village Chief

Name of Village	No. Interviewed	No. of Huts	Name of Village Chief
Bandenin	9	17	Jimmie Tamba
Bassor	6	18	Forkor Fallah
Bayama	5	6	Jammie Fallah
Chiseni	11	38	Sesay Kundor
Fassapo	5	15	Bumbeh Lakpaseo
Fayia Creek	3	7	Unknown
Fornin	7	9	Kendema Fallah
Foya Airfield	24	165	Unknown
Foya Dundu	16	27	Jacob Fallah
Foya Kama	38	64	Bangbeor
Gbalado Bakia	16	32	Foko Kpakior
Hondoni	14	23	Sakilla Saa
Kambo	7	17	Sa Ke
Keledu	7	11	Bundor Tamba
Kilidu	2	8	Unknown
Koindu Pormbor	10	16	Ketor Morntue
Korndorma	5	11	Kandema Sakie
Korluma	6	16	Jimmie Fallah
Kpandorni	2	15	Unknown
Kpangbeni	4	14	Borbor Saa
Kpasimbidu	5	10	Tengbeh Saa
Kpello Dama	6	8	Fallah Mukuor
Kpengisua	5	21	Korfe Fartorma
Kpormbu	23	53	Jeremiah Karngba
Maa	2	7	Unknown
Menegisua	3	6	Tamba Sorngor
Morngorma	3	8	Saa Yema
Ndama	8	17	Unknown
Ndendesu	3	40	Kandama Tamba
Ndolilo	9	3	Tamba Liseor
Senga	12	28	Fallah Senga
Shelloe	12	23	Tamba Taylor
Solapi	8	9	Nyandama Fallah
Sorlormba	6	44	Fallah Koi
Sormbola	5	8	Nyorkor Saa
Willidu	6	10	Fallah Morn
Yalladu	2	12	Unknown
	315	836	

Mean = $\bar{X}$ = 22.6 or 23 huts per village

APPENDIX A (continued)

The reason why we could not get the names of some of the village chiefs was because of fear, probably fear of taxes. In one of our field notes written by Mr. Ken and entered for Thursday, February 19, 1970, we have the following which aptly describes some of the difficulties: "Kpandoni is about 3 minutes drive from Shelloe. It is located between Shelloe and Foya Airfield. It is here that we encountered the most difficulty. We met the village chief. After a brief introduction of the purpose of our visit, he called the townsmen for consultation. This consultation lasted for such a long time that we began to wonder what was happening. Finally, two of the men came and told us that the chief has run away. As a result we were able to interview only two of the farmers and no one was willing to give us the chief's name. There are 15 huts and many farmers but we were able to interview only two."

One significance of Appendix A is the extrapolation that can be made with regard to population studies. There were a total of 836 huts in the 37 villages covered by our study. Earlier we had shown that the 315 farmers in our sample have a total of 1,417 persons living with them. If we add the 315 to 1,417 we have a total of 1,732 or about 5.5 persons per hut. Thus the 836 huts in the 37 villages will house approximately 4,598 persons. It is, however, not valid

APPENDIX A (continued)

to say that each household lives in one hut. Since the average number of huts per household is about 2, we will get a population of about 2,299 persons in the 37 villages.