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# A review of institutional agricultural credit in Ghana with special reference to loan repayment problems

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A review of institutional agricultural credit in Ghana  
with special reference to loan repayment problems

by

Wayne O'Neil Yerby

A Thesis Submitted to the  
Graduate Faculty in Partial Fulfillment of  
The Requirements for the Degree of  
MASTER OF SCIENCE

Major: Economics

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Signatures have been redacted for privacy

Iowa State University  
Ames, Iowa

1977

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## I. INTRODUCTION

## A. The Role of Agriculture in Development

The fundamental economic condition given in development literature for growth in agriculture is an adequate capital investment. This statement, of course, presupposes the basic hypothesis that a developing agriculture is a prerequisite to economic growth. Alternatively, it has also been hypothesized that it should be the industrial sector, as opposed to the agricultural sector, which should provide the sufficient condition for take-off into self-sustained economic growth. In many countries, the agriculturalist's view of development has, more or less, won out. The consequences of such views have culminated into a balanced theory of economic growth. A balanced growth requires that a primitive agricultural economy release favor from agriculture for the production of non-agricultural goods and that the real income of the sector increase by the availability of inexpensive food. This can be attained by the application of technology to agriculture, and the transfer of development capital to non-farm sectors, which requires a continuous decline in the relative importance of agriculture to the national output.

In most developing countries, planners have had to face the dilemma that, because economic resources are by definition severely limited, their allocation according to the criterion of balance may spread them so thin that they are below certain

crucial minimum levels which must be exceeded if productivity and income are to be raised in any direction. The consequences have been that very difficult choices have been made in development plans, with the major objective being the concentration of extremely scarce resources on certain strategic investments, which will remove the most restrictive bottlenecks of the current situation.

### B. Scope of the Study

The traditional achievement of economic development, for Ghana as well as for other emerging nations, is through the goals of economic growth, social equity, and price stability. The means or mechanisms for achieving these goals have been through land tenure institutions and marketing institutions, as well as through the use of fiscal policy, monetary policy, and incomes policy instruments. Unlike some other developing countries, Ghana is relying much more heavily on the agricultural sector as the primary base from which overall economic development will be launched.

Of the means or mechanisms above, the area agricultural credit will be the theme of this thesis: or more specifically, the area of agricultural credit to the small-holder—with special emphasis on loan repayment problems. The scope, as thus stated, of this topic will be adhered to as stringently as possible with full knowledge of its part as an integral

component in the total Ghanaian economy. A more aggregate approach will have to be pursued at times but attempts will be made to hold this to a minimum, so that a more in depth study can be conducted. The primary geographical area of consideration is Northern Ghana: primarily the Northern and Upper regions of Ghana. This is the part of Ghana which the government officials in Ghana see as the most economically productive because of the savanna type geography, thereby rendering land clearing operations less of a problem.

#### C. Limitations of the Study

Probably the most serious limitation of this study is evidenced by the lack of a quantitative assessment of the problem under consideration. The primary reason for this deficiency is that the collection of the primary data from which the study was originally supposed to be based on, was not completed on time. Therefore, the current topic had to be opted for the original, and due to the limited primary data on the topic at hand, the analysis had to be based on descriptive and qualitative techniques.

#### D. Purpose of the Study

Although a preliminary examination of economic development in Ghana revealed several problematic situations in the form of gaps between the existing situation and the desired



Figure 1. Africa



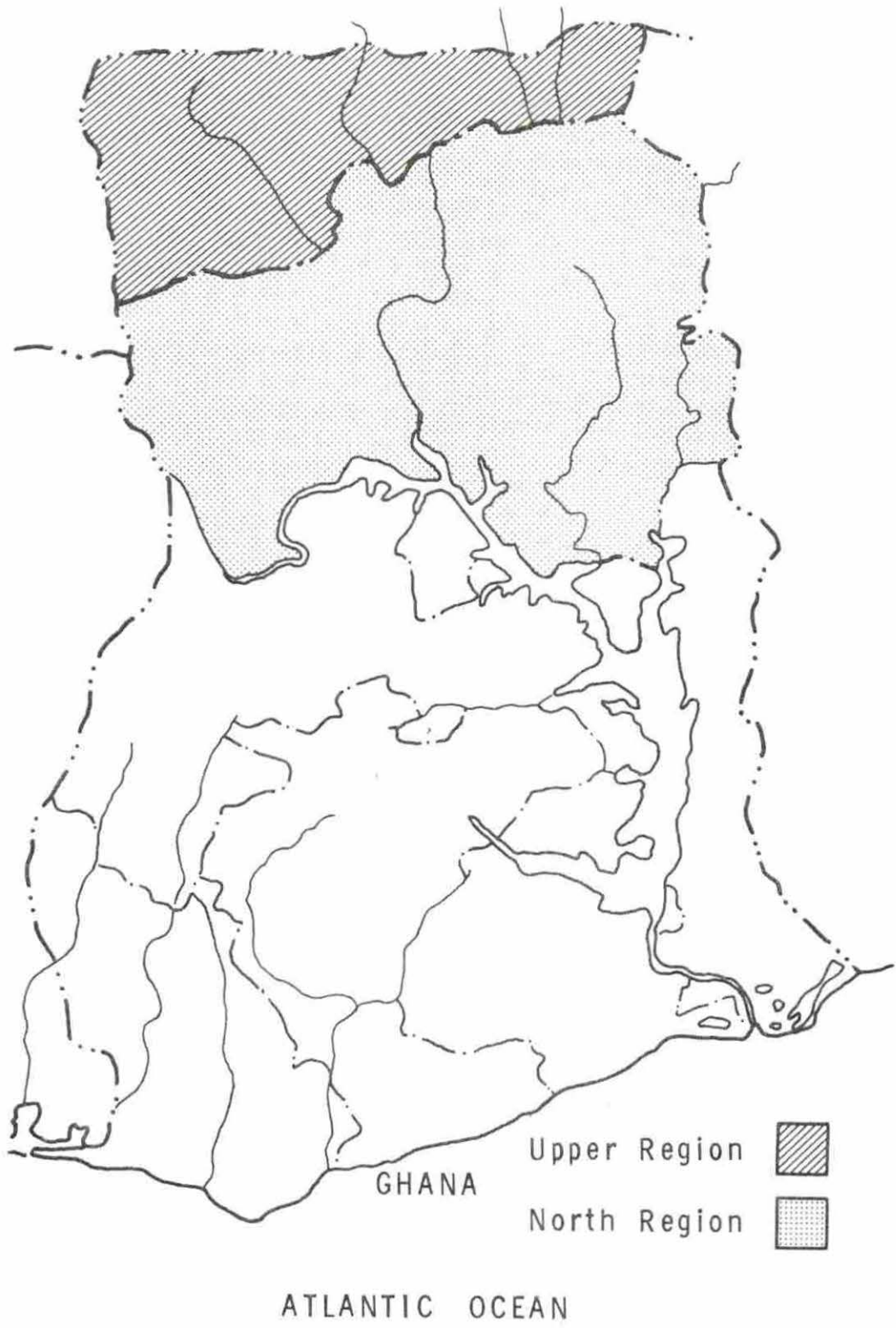


Figure 2. Regional map of Ghana

goals, several considerations dictated the nature of the topic in this study. Probably the aspect which outweighed all others was the current strong belief among many government officials that much more emphasis, particularly at the operational level, needs to be directed toward the small-holder community. The rather large amounts relegated to the agricultural sector in the form of subsidies is evidence of sincerity in this direction. This includes subsidized credit, guaranteed prices, fertilizer (see Table 1 for average fertilizer subsidy), and improved seeds at 25% subsidy (36, p. 145).

Ghanian officials are searching for an operational small-holder production strategy. This search includes input(s), crop(s), price structure, institutional framework, etc. which can be tried and which will work. In trying to aid in this search, this study is encompassing the topic mentioned above.

In delving more deeply into the area of agricultural credit in Ghana, it was found that a more pressing problem facing the development of agriculture in Ghana is the problem of loan repayment. A great majority of the reason given for the poor loan repayment problems consider only the farm level problems. It is the hypotheses of this study that the over expansion of agricultural credit (i.e., a governmental or agency level controlled variable) should actually be considered along with the farm level problems.

Table 1. Ministry of Agriculture fertilizer subsidy levels<sup>a</sup>

Fertilizer	Subsidy <sup>1/2/</sup> Level (¢)	% Subsidy <sup>3/</sup>
15-15-15 (Compound)	13.70	83.0
20-20-0 (Compound)	11.71	80.7
3-25-18 (Compound)	NA	NA
Sulfate of Ammonia	7.71	79.4
Single Superphosphate	5.56	74.5
Triple Superphosphate	11.49	73.1
Muriate of Potash	7.01	77.8
Urea	14.11	70.9
<u>Others</u>		
12-10-10 (Mixture) )		
Sulfate of Potash )	NA	NA
Lime )		
Kieserite )		
Average Subsidy	10.18	77.34

source: Computed from MOA records

1/ Within a radius of up to 5 miles transport charge is ¢3.00 per ton (¢0.15 / 112-lbs.)

Within a radius of up to 25 miles transport charge is ¢5.00 per ton (¢0.25 / 112-lbs.)

From Tema to Accra is 18 miles and so the charge is ¢0.25 / 112-lbs.

2/ Excludes the transport charges of 8.5 pesewas per mile per ton of fertilizer transported to the region

3/ Proportion of the input price that the farmer does not pay.

<sup>a</sup>Modified from 36, p. 145.



### E. Outline of the Study and Methodology

Having delimited the area of study, a more detailed look at the specific goals, existing situation, and the hypothesized problematic gap of the proposed topic can now be investigated. Diagnostic hypotheses will then be proposed and evaluated via analysis of failure and success elements of the institutional technology under consideration. This will, in turn, call for remedial hypotheses which will examine the elimination of failure elements as defects, and possibly, discover and expand success elements as institutional changes. Prior to these hypotheses or phases, there will be an introduction to the agricultural characteristics of the Ghanaian economy, with special emphasis on the Northern and Upper regions of Ghana.

The method of analysis of the problem of loan repayment will be the goals-means continuum. A model of the analytic technique follows.

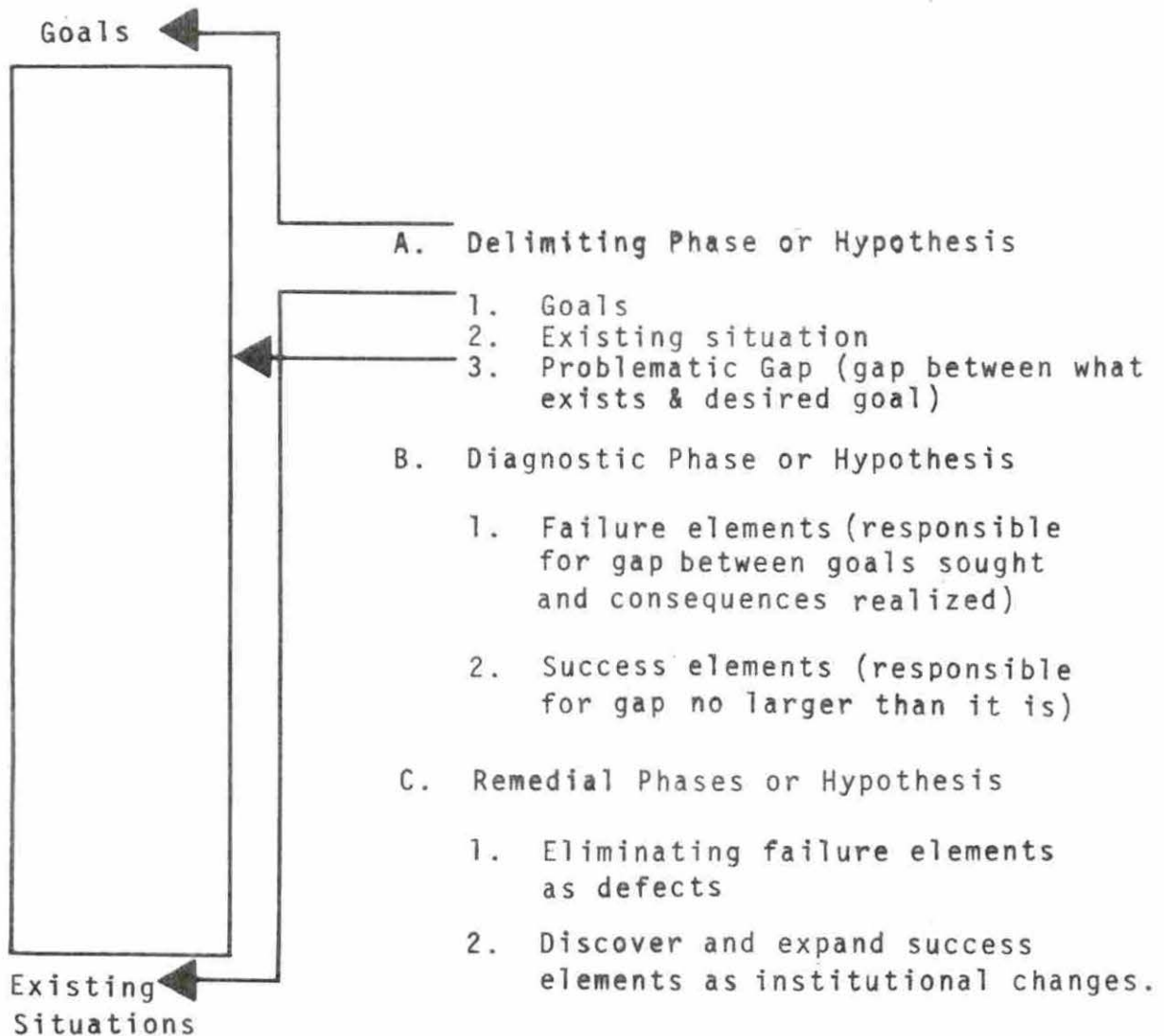


Figure 2a. Interrelationship between goals, means, and consequences (34, p. 88).

## II. AGRICULTURAL POLICY IN GHANA

The first really "agricultural" development policy for Ghana came with the inauguration of Ghana's third Agricultural Development Plan (1959-1964). Among the objectives proposed to develop agriculture, six priorities were stated. They were as follows: (1) to raise the yields of the cocoa industry; (2) to establish the foundation of the cattle industry; (3) to establish large acreages in rubber and bananas in the west and south-west; (4) to raise the yield of cereals in the northern region; (5) to bring the Volta flood plain under irrigation; (6) to study and promote the use of fertilizers. This policy and plan was followed by a period of stagnation for the agricultural sector and moreover for the Ghanaian economy as a whole (32, p. 15). It was not until the early seventies that the government, which came to power on January 13, 1972, launched a full-fledged agricultural policy or program. This program was known as "Operation Feed Yourself" or "OFY". OFY is a self-reliance policy and was the primary base from which the January thirteenth revolution drew its support.

One reason for such policy was the severe international agricultural dependency as evidenced by the significant importation of rice, maize, soya-bean oil, yellow corn, live meat products, powdered milk, and industrial inputs. The

magnitude of this agricultural dependency is demonstrated by Table 2, which is a table of selected agricultural imports (most of which could very likely be produced domestically) from 1969-1973.

Another reason for the policy was the strictly agricultural nature of the Ghanaian economy. Table 3 gives the rural population of Ghana as a proportion of the total population as 71% in 1970. The agricultural sector has also made substantial contributions to Ghana's foreign exchange earnings in both absolute and relative terms. As Table 4 indicates, agricultural and forestry related products contribute somewhere between 69.1% and 80.3% of Ghana's annual foreign exchange over the period of 1969 to 1973.

A final reason concerns the agricultural output mix. From Table 4 it can be seen that cocoa and cocoa products are by far the most dominant export crop and consequently is the most important foreign exchange earner for Ghana. Of course, any program to alleviate an international agricultural dependency in Ghana could not focus on an export crop such as cocoa for at least two important reasons. They are as follows: (1) Agricultural independence means domestic consumption, so what is needed is not more cocoa but more import product substitution and (2) The world market for cocoa products is dominated by a limited number of wealthy countries (see Table 5). There is little scope for expan-

Table 2. Selected agricultural imports 1969-1973 in millions<sup>a</sup> of cedis

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Live Animals/Meat and Meat Preparations	11.9	12.7	9.8	7.7	7.5
Fish and Fish Preparations	4.9	13.9	11.7	11.8	11.8
Sugar, Sugar Preparations and Honey	8.5	16.5	10.5	14.2	21.0
Animal and Vegetable Oils	5.9	3.8	5.3	5.2	6.0
Cotton (fibre)	1.9	5.4	4.7	7.3	12.3
Jute (fibre)	.8	1.4	1.3	1.1	1.8
Tobacco and Tobacco Manufactures	.4	2.1	3.1	1.5	2.6
Total Selected Imports	34.3	55.8	46.4	48.8	63.3
Total Merchandise Imports	354.4	419.1	443.1	381.7	508.1
Total Selected Imports as % of Total Merchandise Imports	9.7	13.3	10.5	12.8	12.5

source: External Trade Statistics of Ghana

<sup>a</sup>36, p. 16.



Table 3. Regional distribution of the rural populations, (000's)<sup>a</sup>

Region	Rural Population as a Proportion to Total (%)		Annual % Compounded Rate of Growth		
	1960	1970	1960	1970	
Western	476.3	565.2	76	74	1.73
Central	547.8	645.2	73	72	1.65
Eastern	879.6	946.0	80	75	.73
Volta	674.0	792.8	87	84	1.64
Ashanti	827.4	1081.8	75	73	2.72
B/Ahafo	502.7	598.3	86	78	1.76
Northern	462.5	580.0	87	80	2.29
Upper	724.8	795.1	96	93	.93
G/Accra	98.4	99.4	20	12	.10
Total	5193.5	6103.8	77	71	1.63

Source: Population Census 1960 and 1970

<sup>a</sup>36, p. 7.

Table 4. Agricultural and forestry related exports 1969-1973  
(millions of cedis)<sup>a</sup>

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Food and Live Animals	189.6	337.5	228.4	334.3	404.3
Cocoa and Cocoa Products	185.7	331.7	222.9	328.2	379.3
Coffee and Coffee Preparations	1.6	3.2	2.5	3.4	2.9
Crude Agricultural Materials	40.8	37.7	34.0	65.2	133.0
Wood, Lumber, and Cork	39.5	37.4	32.9	63.7	130.6
Animal and Vegetable Oils and Fats	0.1	0.3	0.1	0.2	0.1
Total of Above	230.2	375.5	262.5	399.7	537.4
Total Exports of All Items	333.3	467.4	357.5	564.4	730.4
Total Agricultural/Forestry Exports as a % of Total Exports of All Items	69.1	80.3	73.4	70.8	73.6
Cocoa and Cocoa Products as a % of Total Exports of All Items	55.7	71.0	62.4	58.2	54.4

source: External Trade Statistics of Ghana

<sup>a</sup>36, p. 13.



Table 5. World cocoa bean importers, 1969-1974 (metric tons)<sup>a</sup>

	1969	1970	1971	1972	1973	1974
DEVELOPED	837052	893545	952192	971879	917546	865400
N America	235539	300868	338360	307941	267598	237792
N Europe	552137	532945	551881	601529	584008	573695
Oceania	11903	19622	17225	18387	21341	21268
Oth developed	37473	40110	44726	44022	44599	32645
DEVELOPING	27643	36202	40999	37593	37117	36697
Africa	1392	1280	1338	2354	2041	2008
Lat America	18083	22579	28391	20476	21458	22125
Near East	2745	2883	3258	2883	1922	1845
Far East	5397	6444	7992	11865	11680	10704
Oth developing	26	16	20	15	16	15
CENTR PLANND	174642	180705	225757	240591	223551	257738
Asian cpe	140	802	891	1940	8760	9300
Europe USSR	174502	179901	224866	238651	214791	248438

(metric tons)

<sup>a</sup>Source: 14, p. 143.

1969	1970	1971	1972	1973	1974
694873	683194	590479	572362	815471	1247023
178804	214518	192401	162945	226426	336677
472219	422338	357517	371804	529460	840073
8576	16033	12215	10323	12650	17590
35274	30305	28346	27290	46935	52683
22959	25818	25218	24098	31802	46864
1319	1027	893	1565	1755	2393
14285	17083	16616	12652	17265	25530
2583	2521	1991	1910	1801	2070
4758	5162	5700	7958	10965	16854
14	15	18	13	16	17
150238	146722	140271	146018	194484	364905
92	474	499	1110	5830	8600
150156	146248	139772	144908	188654	356305

(1000\$)

sion in the level of consumption of this commodity in the Western European countries and North America. Unless sales are found to be possible in the Eastern European countries, the demand is not likely to rise.

Primarily for the above three reasons, commodity import substitution in rice, maize, livestock, sugarcane, oil palm, and cotton has been stressed. In addition, new emphasis was given to yam, cassava, plantain and sorghum production. Further emphasis or substantiation for import substitution was given as a result of the two problems of the increased food import bill, and underemployed domestic resources (see Table 2).

To stimulate and monitor the "OFY" program, the Ministry of Agriculture requested regional agricultural officers and their staffs to undertake reconnaissance surveys to identify the major crop production activities, available lands, physical input needs, and financial requirements to expand the acreages of the major crops produced in the respective regions. The staff of the Central Ministry, on the basis of the regional crop and acreage reports, then established acreage targets for the major food crops on a regional basis. The country was divided into major agricultural zones on the basis of food crops, and the major crops produced within these zones were given priority by the regional extension staffs.

### III. AGRICULTURAL FEATURES OF GHANA

The Northern and Upper regions of Ghana are a part of what is known as the guinean savanna or middle belt, having hot tropical climates (see Figure 2). Within this belt, the Northern region of Ghana occupies 26,830 square miles and the Upper region of Ghana occupies 10,600 square miles. The total land area of the two regions is therefore 37,430 square miles. About 38% or 14,800 square miles (9,472,000 acres) is considered fit for cultivation. The characteristic poor physical and chemical subsoils is evidenced by the high kaoline content of the clays causing leaching, low cation absorbing capacities and low nutrient contents. The annual rainfall in the guinean savanna belt ranges between forty to fifty inches with a single maximum peak in late August and early September. The effective dry season extends to five to five and one-half months per year. Without irrigation the climate is too dry for plantation crops.

#### A. Population Characteristics

The Northern region ranks first in total land area of all regions in Ghana (see Table 6). The population density is twenty-seven persons per square mile, which is the lowest of any region in Ghana. The region ranks eighth in terms of the number of agricultural holders and fifth in terms of the total

Table 6. Total land area of Ghana by regions (square miles)<sup>a</sup>

Regions	Land Area (sq. mi.)
Ashanti	9,700
Brong-Ahafo	14,900
Central	3,656
Eastern	8,750
Northern	27,122
Upper	10,478
Volta	8,000
Western	9,494
Total	92,100

source: Worldmark Encyclopedia of the Nations

<sup>a</sup>47, p. 93.



number of individuals domiciled in agriculture (10% of the national total)(36, p. 196 ). The region has the largest median agricultural household size (see Table 7). The principal food crops in the Northern region are maize, sorghum, millet, rice cassava, yam, groundnuts, beans, and cowpeas. The relative importance of these selected crops is outlined in Table 8.

The Upper region ranks third in terms of the number of holders in agriculture and second in terms of the total number of people domiciled in agriculture (18% of the national total). On the basis of the overall population (rural and urban) the region ranks fourth with 10% of the total population. The population density in the Upper region was estimated to be 8.2 persons per square mile in 1970. The region ranks second in terms of total cultivated acres, accounting for 14% of the total cultivated area (36, p.198). The principal crops grown in the Upper region are maize, sorghum, millet, rice, cassava, yam, groundnuts, beans and cowpeas. The relative importance of these selected crops is outlined in Table 9.

#### B. Rice Production in Northern Ghana

Due to the relative position of rice as a topic of discussion into various aspects of this crop is necessary. Such a discussion follows.

Table 7. Labor utilization of household members on holdings<sup>a</sup>  
by regions

<u>Region</u>	<u>Full-time</u>		<u>Part-time</u>	
	000's	%	000's	%
Western	130	35	108	29
Central	148	36	134	33
Eastern	194	27	303	42
Volta	120	21	217	39
Ashanti	215	27	332	41
Brong-Ahafo	138	37	145	34
Northern	161	44	135	31
Upper	255	32	272	34
Total	1362	30	1645	36.5

<sup>a</sup>36, p. 69.



---

<u>Not at all</u>		<u>Total</u>	<u>% Share of</u>
<u>000's</u>	<u>%</u>	<u>Household</u>	<u>Total Rural</u>
		<u>Members</u>	<u>Population</u>
132	36	370	65
125	31	407	63
216	31	713	68
224	40	561	71
259	32	806	75
143	29	426	71
138	25	434	75
275	44	802	99
—		—	
1510	33.5	4517	74

---

Table 8. Northern Region: Relative importance of selected crops, 1973<sup>a</sup>

Crop	% Holders in Region Producing Crop	Relative Importance of the Crop		Acres <sup>1/</sup>		Production	
		%	Rank	%	Rank	%	Rank
Maize	90	9	6	14	4	16	3
Sorghum	90	40	2	20	2	35	2
Millet	95	38	2	10	2	30	2
Rice	10	15	2	45	1	54	1
Cocoayam	—	—	—	—	—	—	—
Cassava	38	4	7	1	7	5	7
Yam	79	24	1	43	1	23	2
Plantain	—	—	—	—	—	—	—
Groundnuts	54	27	2	37	2	25	2
Beans and Cowpeas	19	11	2	28	2	27	2
Cocoa	—	—	—	—	—	—	—
Oil Palm	—	—	—	—	—	—	—

Source: MOA, Current Agricultural Statistics, 1973

<sup>1/</sup> Includes crop in pure and mixed predominant stands.

<sup>a</sup>36, p. 197.

Table 9. Upper Region: Relative importance of selected crops, 1973<sup>a</sup>

Crop	% Holders in Region Producing Crop	Relative Importance of the Crop		Acres <sup>1/</sup>		Production	
		%	Rank	%	Rank	%	Rank
Maize	23	4	8	6	7	6	7
Sorghum	72	57	1	77	1	63	1
Millet	85	59	1	89	1	70	1
Rice	15	39	1	13	3	16	2
Cocoyam	—	—	—	—	—	—	—
Cassava	3	4	7	neg.	8	neg.	8
Yam	7	4	7	7	4	8	4
Plantain	—	—	—	—	—	—	—
Groundnuts	49	43	1	44	1	70	1
Beans and Cowpeas	77	85	1	72	1	67	1
Cocoa	—	—	—	—	—	—	—
Oil Palm	—	—	—	—	—	—	—

Source: MOA, Current Agricultural Statistics, 1973.

<sup>1/</sup> Includes crop in pure and mixed predominant stands.

<sup>a</sup>36, p. 199.

Historically rice production in Ghana predominated in the Volta region, but since the late 1960's, the Northern region has been the major producer along with the Upper region (36, p. 94). In the Northern region 10% of the holders in the region produce rice (see Table 9). In reference to the relative national importance of the crop in the region, the region ranks second in the number of holders producing rice with 15%, it ranks first in the percentage of acres under rice production with 46%, it ranks first in the production of rice with 54% (see Table 8).

In the Upper region 15% of the holders in the region produce rice. In reference to the relative national importance of the crop in the region; the region ranks first in the number of holders producing rice with 39%; it ranks third in the percentage of acres under rice with 13%; it ranks second in the production of rice with 16% (see Table 9).

In looking at the nine most important food crops in agriculture and the Ghanaian diet, excluding cocoa, rice ranked ninth or last in the present contribution to the total value of agricultural production (see Table 10). It also ranked ninth (last) in the percent of total cultivated acres (see Table 10). The figures grossly underestimate the significance of rice since this data were collected. A recalculation of the figures for these same eight most important food crops reveal this new expansion in rice and the increase in its

Table 10. Relative importance of nine food crops and cocoa<sup>a</sup> in Ghanaian agricultural, 1970

	<u>Percent Contribution to Total Value Agricultural Production</u>	<u>Percent of Total Cultivated Acres<sup>1/</sup></u>
Plantain	13.3	3.0
Cocoayam	8.9	1.5
Yam	8.4	4.6
Cassava	8.4	4.9
Maize	3.5	11.3
Sorghum	2.7	4.4
Groundnuts	2.2	2.8
Millet	2.0	6.0
Rice	<u>1.4</u>	<u>2.1</u>
Sub-total	50.8	40.6
Cocoa	<u>34.6</u>	<u>55.0</u>
Total	85.4	95.6

Source: Adapted from the 1970 Ghanaian Sample Census of Agriculture and B. I. Rourke, "Rural Employment and Labour Productivity in Ghana," mimeo. Legon, Ghana. March 1974.

<sup>1/</sup> Based upon only main season crop acreage and pure stand and dominate crop mixtures but not subsidiary mixtures.

N.B. The relative importance of rice is understated in this table because of the large acreage expansion and increased yield which have occurred since 1970. Today, rice probably follows maize in relative importance.

<sup>a</sup> 36, p. 84.



relative importance (see Tables 8 and 9, 1973 data). The reason for this recent expansion in rice can be attributed to the fact that rice is the major crop in which the government of Ghana has embarked on an import substitution campaign. This is interesting, since the economic costs of present and expanded production are higher for rice than for any other food crop produced in Ghana (see Table 11). Other considerations outweighed this fact in the government's decision. For instance, imports of rice to Ghana the previous years have been approximately 30,000 tons per year. This represents an investment in foreign exchange and future years amounting to roughly \$4,500,000 per year. Meanwhile, rice consumption in Ghana is rising at a rate of approximately ten per cent per year as population increases and rice becomes more popular as a part of the diet (38, p. 1).

The rice industry in Ghana has been heavily favored. A very large proportion of the fertilizer used in Ghana has been allocated to the Northern region and has been increasingly subsidized in recent years. Table 12 shows the regional distribution of fertilizer by type. Supplies of sulphate of ammonia, 15-15-15 fertilizer and 20-20-20 fertilizer (each of which is recommended by the Ghanaian Ministry of Agriculture for rice) heavily favor the Northern and Upper regions. In addition, a major effort of the Seed Multiplication Unit of the Ministry of Agriculture is located in the Northern region.

Table 11. Potential gross output per unit of input<sup>a</sup>

Crop	Gross Output/Acre (shillings)	Input/Acre (excluding labor) (shillings)	Output/Unit of Input
Maize	920	130	7.1
Groundnut	975	116	8.6
Rice	800	348	2.3
Tobacco	1200	208	5.8
Cotton	1000	102	9.8
Vegetables	3200	1010	3.2

<sup>a</sup>Source: 16, p. 2.



Table 12. Ministry of agricultural regional fertilizer distribution, 1973 (quantity in tons)<sup>a</sup>

<u>Region</u>	<u>Sulphate of Ammonia</u>	<u>15-15-15</u>	<u>20-20-0</u>
Eastern	178	1,550	250
Greater Accra	414	2,051	300
Central	348	676	126
Western	100	250	20.5
Ashanti	830	1,926	178
Brong-Ahafo	92	500	175
Volta	245	676.5	118
Northern	3,763	4,500	1,900
Upper	2,130	2,149	350
Ghana Tobacco Co.	-	-	-

Source: MOA Records

<sup>a</sup>36, p. 139.

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<u>Single Superphosphate</u>	<u>Triple Superphosphate</u>	<u>Muriate</u>
-	50	-
30	50	25
-	50	45
-	-	-
20	100	100
-	-	-
-	-	-
800	50	30
650	-	-
-	-	-

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### C. Farming Systems

Three farming systems; shifting cultivation, compound farming, and irrigated gardens, are found within the area, though the extent to which each is practiced varies from place to place. In the Upper region conditions are somewhat more settled. Fallows are shorter, and compound farming is widely practiced because of the density of the population.

Under the system of shifting cultivation, a piece of land is cleared of bush growth and is kept under crops for a period of four to six years, after which it is allowed to remain fallow and get covered again with natural growth of grass, shrubs and trees. During this period another piece of land is cleared and crops are grown on that area.

Compound farming is carried out on a small piece of land, adjoining the village settlement or site, and more or less permanently cultivated by a farming family. The small area, or compound, is wholly or partially manured with cattle dung to grow rather high value crops like tobacco, chilies and even some vegetables under rainfed conditions. To the extent that the small piece of land is neither a hut area nor enclosed by a wall or fence, the local term compound farming is misleading. In addition to such areas each farming family has, at some distance from the settlement, an area under shifting cultivation for growing such crops as guinea corn,

milletts and pulses.

The irrigated gardens are also small areas, used by the individual farmers, in addition to land under rainfed crops, to grow vegetables under irrigation, wherever suitable water is available in the dry season. Such gardens are found in large numbers in northern Ghana, even where only a limited amount of water is available, such as from wells or dugout holes in stream beds. These gardens have also sprung up near the small dams built by the government for water supply. Usually, water is carried in buckets from its source, and it is applied by sprinkling over the plants.

#### D. Land Capability

A broad division of the arable land into upland and lowland can be made. The uplands have soils mostly medium to light and easy to cultivate, which can support a variety of crops, like guinea corn, milletts, pulses, cotton, groundnut, etcetera. The main drawbacks of some of these soils are their shallow depth, the susceptibility to erosion, their low fertility, and the presence of concretionary sub-soil or iron-pan. The lowland on the other hand had heavy, fertile soils, difficult to cultivate with manual labor and oftentimes problematic, especially in or along the depressed, narrow, seasonally water-logged valleys, flanked by country which is uninhabited because river-borne insects can be contracted there. With

drainage and mechanical cultivation these soils could produce an excellent rice crop. The agronomist has suggested that cotton should be grown on deep, well-drained, medium to heavy soils, rice in poorly drained heavy lowland soils, maize in well-drained medium textured soils, tobacco on medium heavy soils, groundnut on coarse sandy soils and pulses on medium silt loams.

#### E. Traditional Forms of Land Tenure

The predominant form of property in northern Ghana is patrilineal. Land is owned by the community which allocates use rights to its families. In a patrilineal society, a deceased's use rights will be given to his or her children. Fragmentation is not likely to be more pronounced in areas cultivated by patrilineal societies as opposed to matrilineal society a deceased's right's are given to the children of his or her children, all of whom generally have a greater number of children than the deceased. There is a marked correlation between degree of commercialization and proportion of holdings reporting freehold tenure by region. The proportion of samples reporting communal tenure in the Upper and Northern regions, where opportunities for cocoa and commercial food production have historically been less favorable, were seventy-three per cent and 100% respectively as opposed to seventy-three, sixty-six, and fifty-six per cent respectively



in the Eastern, Ashanti and Central region, where cocoa is the major cash crop (37, p. 9).

#### IV. AGRICULTURAL CREDIT IN GHANA

##### A. Review of Agricultural Credit in Ghana

The first attempt at establishing a successful institutional agricultural credit program in Ghana started with the granting of credits by cocoa co-operatives during the cocoa season of 1931-1932. Although this venture was said to have been successful, later programs met with limited success, thereby leaving the bulk of the agricultural credit in Ghana to be provided almost entirely by relatives, friends and money lenders. In April 1964, the Bank of Ghana established a Rural Credit Department to study the problems of agricultural credit and prepare the necessary legislation, plans and procedures for the establishment of an agricultural credit bank. In April of the following year, Parliament passed an act (Act 286) to incorporate the Agricultural Credit and Co-operative Bank. The new bank started its operations in August 1965, taking over the assets and liabilities of the Rural Credit Department of the Bank of Ghana. Two years later, the initial act was amended by a decree of the National Liberation Council (Decree 182) and the bank's name was changed to the Agricultural Development Bank (ADB)—the principal source of short term agricultural credit in Ghana today. (see Table 13). (Because the ADB is the principal source of small farmer credit in Ghana, it will be its' efforts which

Table 13. Loans and advances to the agricultural sector<sup>a</sup>  
1969-1973 (1,000 Cedis)

S O U R C E	1969	1970	1971	1972	1973
Commercial Banks	10,000	9,048	16,154	16,048	17,300
National Investment Bank	769	692	3,433	7,583	4,112
Agricultural Development Bank	3,070	4,530	8,622	28,469	17,823
Total	13,839	14,270	20,209	52,100	39,239

<sup>a</sup>Modified from: 21, p. 2.

will play the major role in this study. In analyzing its' programs, we will then be actually analyzing the small farmer credit problems of Ghana.)

With the establishment of a institution whose sole purpose was the providing of agricultural credit, it was believed that Ghana's agricultural credit problems would be settled over night. This was not the case, primarily because the ADB's attempt to establish a sound agricultural credit program was not coordinated or did not coincide with an over-all agricultural development policy for the country of Ghana as a whole. (The ADB started its operations in 1965, while the first authentic agricultural development policy did not start until early seventies.) Some coordination did come with the conception of "Operation Feed Yourself" in the early seventies, but there was some misdirection in the desired goals.

In considering credit as an input in relation to the agricultural entrepreneur, there was apparently, initial stages of OFY, less consideration given to the issue of credit, even though all of the inputs of agricultural production required some sort of cash outlay—either on the part of the government, the farmers themselves, or a combination of the two. One rationale for this policy follows.

Despite the initial reliance on the small-scale farmer to increase food production, increasing emphasis was placed on larger farms which use relatively capital intensive produc-

tion systems in certain areas of the country, and in the production of certain crops. There was little need for a governmental agricultural credit policy because these large scale enterprises could deal directly with the local commercial banks. In observing the apparent discrepancy between actual practice (i.e. the ever increasing tendency toward large scale producer lending) and the initial emphasis (the small-scale farmer); policy makers have now shifted from large-scale, capital intensive, public corporation units to small-scale farmers.

#### B. Features of the Commodity Group Credit Scheme

Having shifted the emphasis of its development policy to the small farmer, the ADB which is the principal source of agricultural credit in Ghana, turned to the task of establishing a mechanism or mechanisms whereby the goal of an optimal small farmer credit program could be achieved. In considering the small-scale nature of the Ghanaian economy, which can be seen from Table 14, the result was the Commodity Group Credit Scheme (CGCS).

Formally the CGCS was designed to achieve the following objectives (4, p. 15):

1. To modify and liberalize ADB lending procedures so as to make credit facilities more accessible to large numbers of small-scale farmers in the country



Table 14. Distribution of size of holding and the number of<sup>a</sup> holdings relative to cultivated area

<u>Size of Holding (Acres)</u>	<u>Cumulative Percentage of Farms</u>	<u>Cumulative % of Land Area</u>
0 - 1.9	31	4
2.0 - 3.9	55	10
4.0 - 5.9	68	18
6.0 - 7.9	77	26
8.0 - 9.9	82	32
10.0 - 14.9	89	43
15.0 - 19.9	93	52
20.0 - 29.9	96	63
30.0 - 49.9	98	74
50.0 or more	100	100

Source: Adapted from the Ghana Sample Census of Agriculture 1970.

<sup>a</sup>36, p. 72.

2. To step up production of staple food items namely, maize, rice, yam, cassava, shallots, and some industrial crops, such as, tobacco, cotton and ginger

3. To increase farm income of the small-scale farmer and thereby improve upon his standard of living

4. To introduce gradually among these farmers the use of modern technology and up-to-date cultural practices in the production of food and cash crops.

In the actual application procedure for a loan by a group, the first step is for the group of farmers to join together and decide upon their acreage (with the requirement that each have at least six acres). The group then applies for a loan either directly or through the district crop production officer. If the district officer is involved, he passes the data on to the nearest ADB office with his comments. In either case, upon receipt of the application, the ADB representative scrutinizes the loan with respect to the conditions in the loan agreement. If everything is in order the bank officer approves the loan. Whether the bank approves the loan or not, the officer then must let the crop production officer and the group know the status of the application. The bank officer will convey the decision to the group either by letter or word of mouth, whichever is most convenient and feasible. If the bank approves the loan, then the next step is for the bank officer to examine the area of the group before making the first disbursement (which is after

the land is cleared and prepared for planting). After checking the area prepared, if everything is acceptable the officer prepares the disbursement form and fixes a date for the group to come pick up their check. The location of disbursement of the checks is always in a town with commercial banking facilities so that the checks can be cashed. With respect to the actual disbursement all members of the group must come and pick up their separate checks.

The second disbursement of the cash loan is after the second weeding but before harvesting. Once again, the ADB must first visit every group member's farm to ensure that the correct acreage has been planted and cared for. Once the acreage has been verified the same procedure as before is followed. If in checking the acreage of the farmers in the group, the ADB officer finds that the acreage of any member at the time of the second disbursement is not the same as that of the first disbursement, then the second payment is only for the reduced acreage of the member.

In the general loan application, the ADB collects data on; where the farm(s) are located, the acreage, whether freehold or leasehold, who manages the farm, the amounts owned and to whom, the purpose and amount of the loan as well as total cost of the project, sources of additional capital needed and security offered for loan and finally the particulars of the marketing of produce. This information is then used to eval-

uate lender asset availability and prior indebtedness. The loan officers at the Farm Credit Service Offices or the local ADB branch are responsible for repayment. If a loan becomes delinquent by more than six months, a penalty interest rate of 10% becomes applicable, and if no response is received from the client concerning the arrears, the case is sent on to the ADB's legal section in the head office in Accra. If a loan falls due and the client is unable to pay and no dishonesty on the part of the client is apparent, the loan is rescheduled at the usual interest rates (21, p. 23).

### C. Success vs. Failure Elements

#### 1. Government or agency level vs. farm level

Of the objectives of CGCS listed above, the ones considered most important by the ADB were the liberalizing of loan making with the view of reaching the broad masses of farmers and also the objective of helping the small-scale farmer to step-up food production in Ghana. Actually the ADB looked on the group lending scheme more as an operational cost-saving device. The bank rationalized that by using the group credit scheme, the high cost of granting loans on an individual basis to large numbers of small farmers would be considerably reduced. It was further rationalized that without such a device as the group credit scheme, the cost of appraisal studies, loan servicing, supervision and collection would have



otherwise been very high (4, p. 15).

If the initial objectives of the CGCS are taken as goals, it could legitimately be said that the CGCS is a success. These objectives do not represent the ultimate goal unfortunately, since the ultimate goal is a sound agricultural credit program for Ghana. The idea of a group scheme for credit application was rationally conceived, and it is doubtful that a predominantly small farmer economy such as Ghana could have an effective small farmer credit program without such a mechanism. This is primarily because of the fact that the obtainment of personal collateral would be extremely difficult for the average small-scale farmer in Ghana. So the CGCS has been successful in the objective of extending credit to a larger number of small-scale farmers and it appears that operational costs were in fact reduced with the adoption of the group credit scheme for the small-scale farmer in Ghana. However, because of the liberalization of loan procedures, the problem of high delinquency rates on loans were magnified. In its annual reports in 1972 and 1974, the ADB made special mention of the poor repayment performance of its customers. The following reasons were given:

1. Frequent shortage of basic inputs and equipment
2. Unfavorable weather conditions resulting in insufficient production and hence insufficient revenue to pay their loans on schedule
3. Inadequate marketing avenues and arrangements



4. Public attitude to repayment of loans from government and credit agencies—credit is regarded as government money not meant to be paid back.

All of these reasons are sound but in actuality they are very limited in scope because they primarily look at the problems at the lowest level (i.e. the farm level). Very little literature can be found on the analysis of externalities at the agency (i.e. the ADB itself) or at the governmental level. So in trying to further investigate and identify any failure elements, I will proceed back to the initial objectives set forth for the CGCS. The objective of modifying and liberalizing ADB lending procedures so as to make credit facilities more accessible to the large numbers of small-scale farmers in the country will be looked at primarily. The initial objectives will be referred to because they follow the actual granting of credit.

## 2. Literature review of agricultural credit with special emphasis on loan repayment problems

An attempt on the part of a government in a developing country to increase the size of its borrower clientele can in some respects be likened unto the decision to increase production made by the individual firm. The good and the bad effects of an increased extension of credit can be labeled as economies and diseconomies of scale respectively. Unfortunately though, owing to the inherent differences between the

financial industries involved with industrial versus agricultural production, the use of the theory of the firm cannot be made explicitly. Belshaw points out that fundamentally, credit plays the same part in farming as it does in other industries. The differences which separate agricultural from other forms of credit, are differences in degree rather than in kind. The differences in degree are so great, however, as to warrant special study. These differences depend mainly upon the characteristics of production and organization in farming (7, p. 57). Belshaw further enumerates these differences as: (1) the complexity of structure and wide variety in organization and methods, (2) the unit of agricultural production with reference to size and number of the economic unit, the division of labor and the use of machinery, (3) the lack of specialization, (4) difficulties of combination in agriculture which raise barriers to corporate effort, and lastly (5) the risk and uncertainty due to changing conditions of supply and demand which cannot be foreseen (7, p. 57).

To complicate the problem of analysis even more, discussions on the subject of agricultural credit and agricultural development in general, have tended to note the general inapplicability of a generalized theory expounded on an overall country basis. Johnston and Mellor have pointed out that diversity among nations and the variety that is so characteristic of agriculture inevitably limit the validity of a

condensed, general statement (23, p. 590). Discussions have also emphasized and consequently recognized the inherent differences between economic applications in industrialized versus developed countries. Reports of the experimentation in agriculture is extremely difficult and costly, and only rarely successful (13, p. 1) with reference to the area of agricultural credit, the transfer of knowledge and technology has usually meant the requirement of collateral as security for loans. Generally, apart from land and only in the area occupying owners, the peasants' tangible assets are few and the use of land for security is often beset with other difficulties. The importance which the farmer attaches to economic security and the perpetuation of the family may make him reluctant to pledge it except under duress, such as may result from personal misfortune or social pressure to incur ceremonial expenditure. But, in addition, the title to land may not be clear or there may be a number of owners of fragmented pieces (6, p. 31).

What planners and development economists have tended toward in investigating the problems of agricultural credit, especially the problem of loan repayment rates, is the use of case studies or individual observation as one methodology for investigating problems of agricultural credit. Fortunately, these observations have uncovered some guidelines on the effects and causes of poor loan collection performance in



in developing countries. One such observation has been that loan collection performance tends to vary inversely with the range of access effectively achieved by a rural credit scheme (27, p. 50). One rationale given for this phenomenon is that assuming other things equal and viewed from the long-run perspective, lenders who are very selective and serve only those farmers who are better able to repay loans, tend to achieve better collection results than other lenders who offer credit to a much larger proportion of rural people than could meet the conventional standards. Collection performance deteriorates as credit standards are lowered. Yet only by lowering credit standards is it possible to lend to larger proportions of the rural population. Rural development tends to be viewed by the development profession as inherently involving broadly based measures which will enable large segments of the rural population to progress. Thus, public sector credit schemes tend to cast their net widely, aiming at including as many rural people as possible. This manifestation of political concern for access and equity conflicts with the financial logic of credit (39, p. 3). The financial logic of credit is synonymous with the adoption of a profit motive in borrowing and lending operations of a financial institution. If a financial institution is to adhere to the financial logic of credit it must be certain that it adheres to certain practices. It must correctly estimate the interest rate as the price which

it charges for the use of its' funds. This interest charge should allow for such things as various types of risk, uncertainty in business operations, borrower integrity and the nature of security (7, p. 34).

Even though the above analysis in applying such phrases as "other things equal" and "the financial logic of credit," make the above analysis sound very much like the type of analysis which was brought forth in the early stages of the formulation of economic development policy, the analysis itself is useful in that it points to the planning level for the causes of loan repayment problems. One of the main conclusions reached by an FAO agricultural credit study in 1965, was that one of the main reasons why so many projects aimed at strengthening the agricultural credit structure have yielded inadequate results or failed completely is, undoubtedly, a prevailing tendency to overlook a number of preconditions in the economic, social, political, psychological, and cultural fields (17, p. 9). In employing the analysis of loan repayment problems listed above as a hypothesis, this study will attempt to objectively analyze the planning level agricultural credit institution in Ghana. This institution is the Agricultural Development Bank of Ghana.



3. Analysis of the problem (agency level)

a. Relationship of loans approved, loans outstanding, profits, percent loan repayment rates and percent short-term investment over time of the ADB of Ghana      A quantitative look at the five variables of loans approved, loans outstanding, profits, percent loan repayment rates and percent short-term investment, over time, of the ADB of Ghana, appears in Table 15 and is graphically represented in Figures 3 through seven. A matrix of the correlation coefficients of five variables listed in Table 15 appears in Table 16. In looking at the operational strategy employed by the ADB over the years during 1969 through 1974, it appears that throughout that period, the major preoccupation of the ADB was the expansion of credit access. Since this objective seemed to be the recurrent preoccupation, an attempt will be made to analyze the variable loans approved along with loans outstanding, percent short-term investment, percent loan repayment, and profits. The correlation over time of loans approved and loans outstanding for the ADB was .6353 (see Table 16). The two variables moved almost parallel over the period of 1969 through 1971, with a slightly more rapid increase in loans outstanding during 1971 (see Figure 4). The more rapid increase in the loans outstanding during 1971 is also evidenced indirectly by the increase in the percent loan repayment for the year. The years 1972 to 1973 saw the volume of loans outstanding grow at a sustained rate for each

Table 15. Loans approved, loans outstanding, profits and percent loan repayment - Agricultural Development Bank of Ghana (1969-74) (volume in cedis)<sup>a</sup>

Year	Loans Approved <sub>t</sub>	Profits <sup>b</sup>	Loans Outstanding	Percent <sup>c</sup> Repayment	Loans Approved <sub>t - 1</sub>	Percent Short-term Investment
1969	3,070,117	208,700	3,568,788	.860	1,215,091	12.5
1970	4,529,775	198,500	6,159,786	.735	3,070,117	9.7
1971	8,622,441	419,335	10,996,626	.784	4,529,775	18.0
1972	28,468,712	632,033	24,277,750	.853	8,622,441	37.0
1973	17,823,281	932,656	38,323,400	.465	28,468,712	38.0
1974	14,661,122	393,916	43,506,528	.337	17,823,281	40.0

<sup>a</sup>Source: ADB Records.

<sup>b</sup>Profit is taken here as a measure of loan recovery performance because of the method of profit computation used by the ADB. Profit and loss accounts reflect interest accrued but not paid.

<sup>c</sup>Percent Repayment<sub>t</sub> = Loans Outstanding<sub>t</sub> / Loans Approved<sub>t</sub>, where t = 1969-1974.

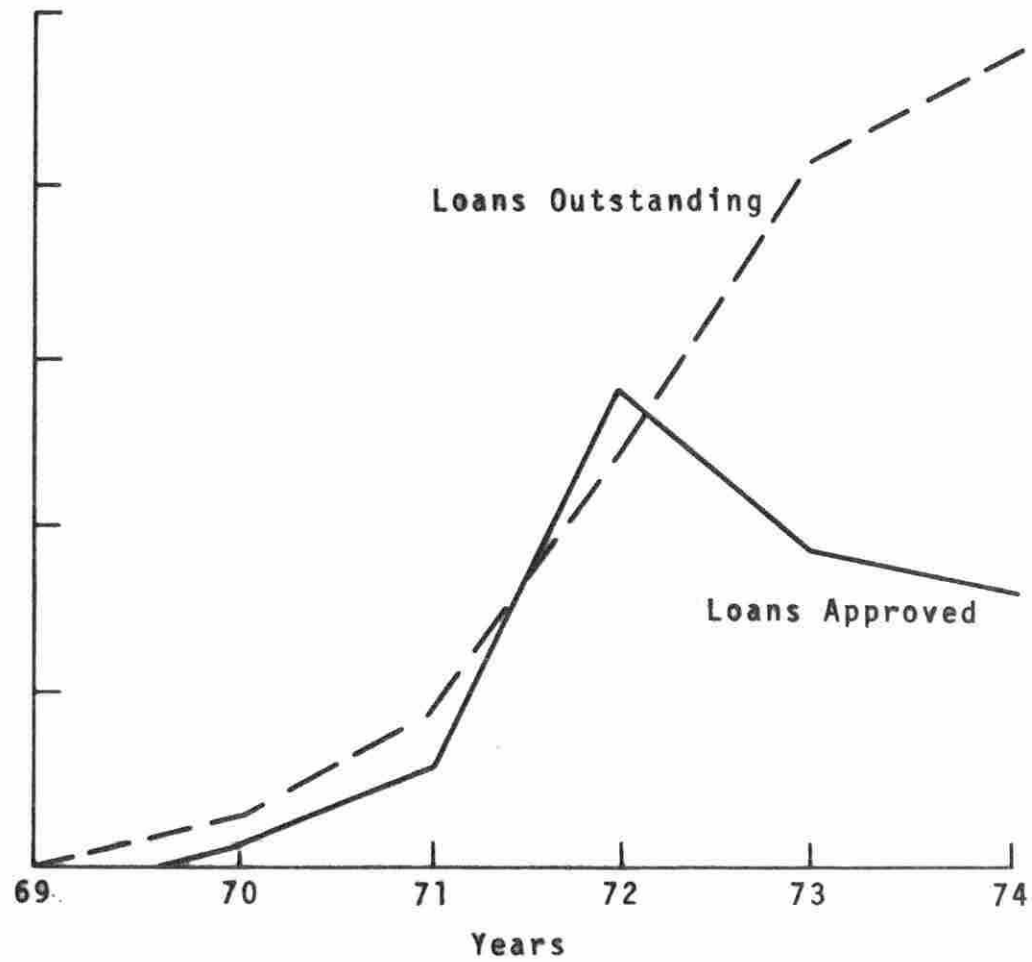


Figure 3. Relative performance of ADB loans outstanding and loans approved 1969-1974

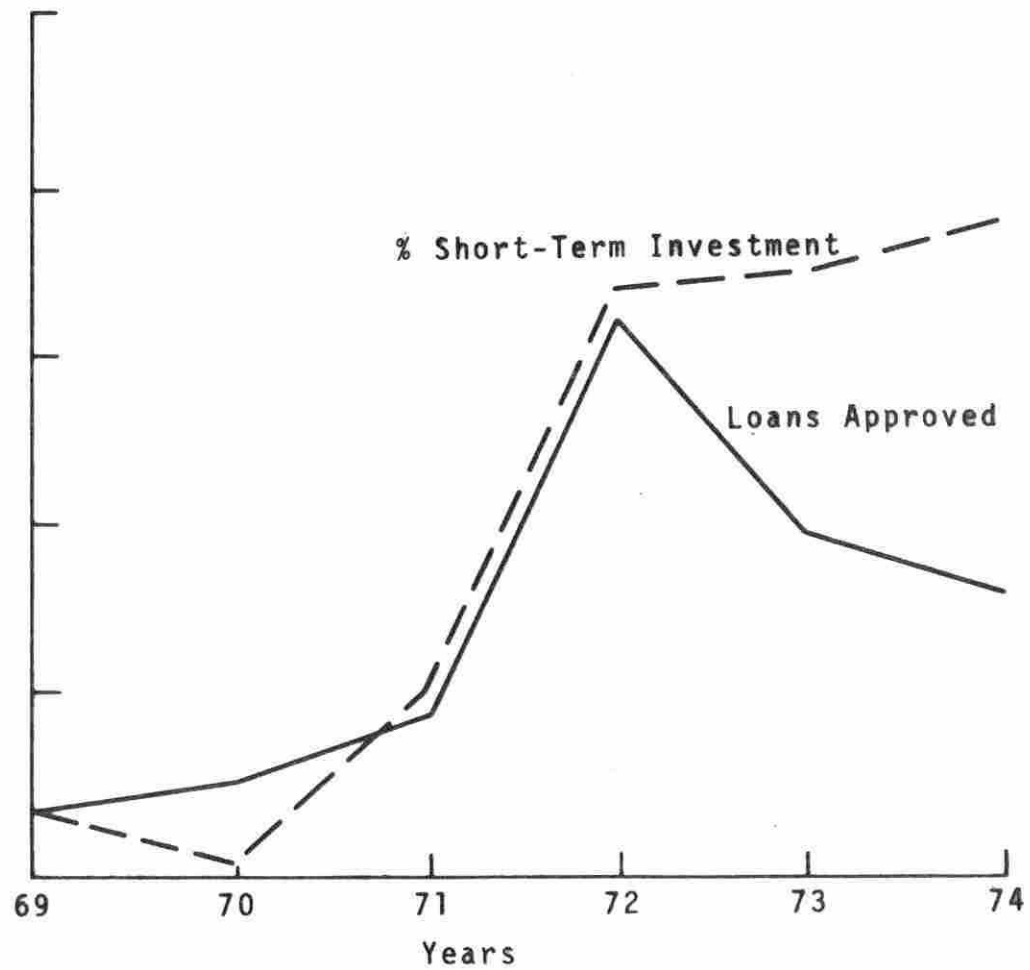


Figure 4. Relative performance of short-term investment and loans approved 1969-1974

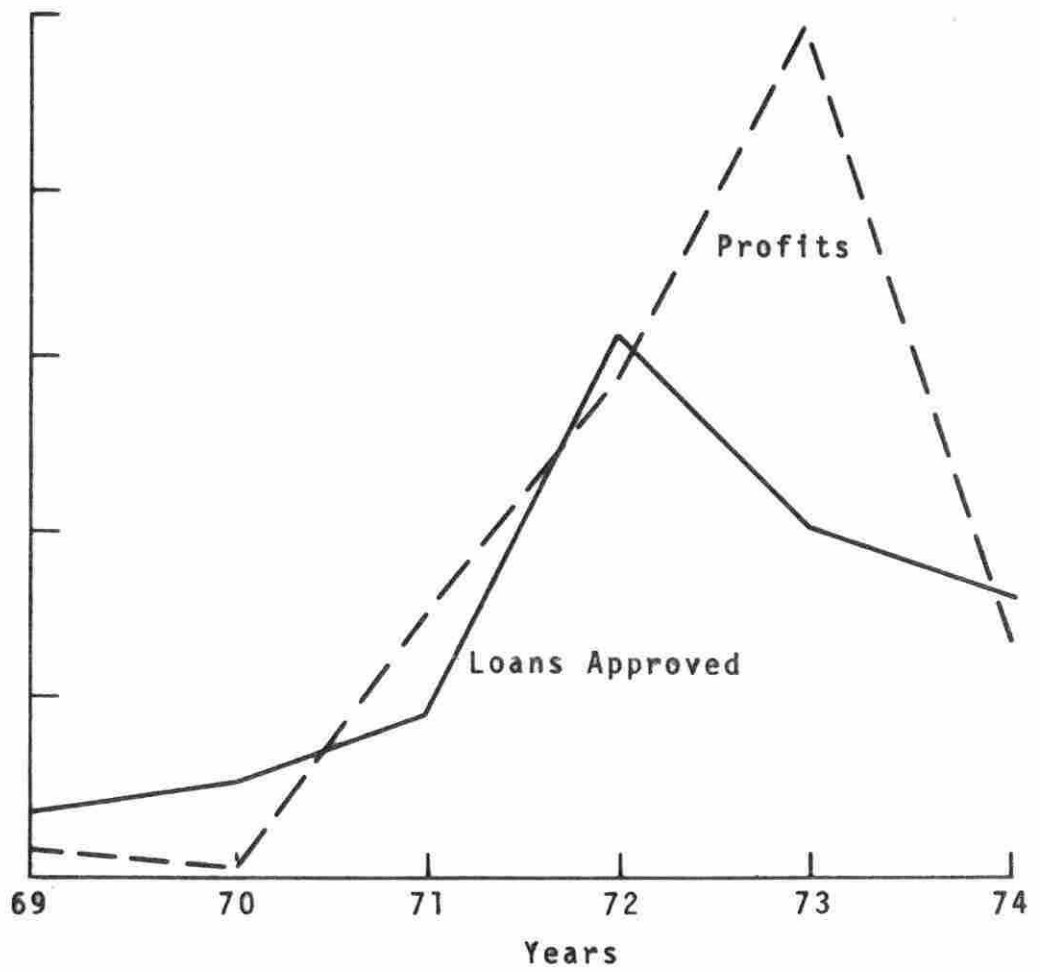


Figure 5. Relative performance of ADB profits and loans approved 1969-1974



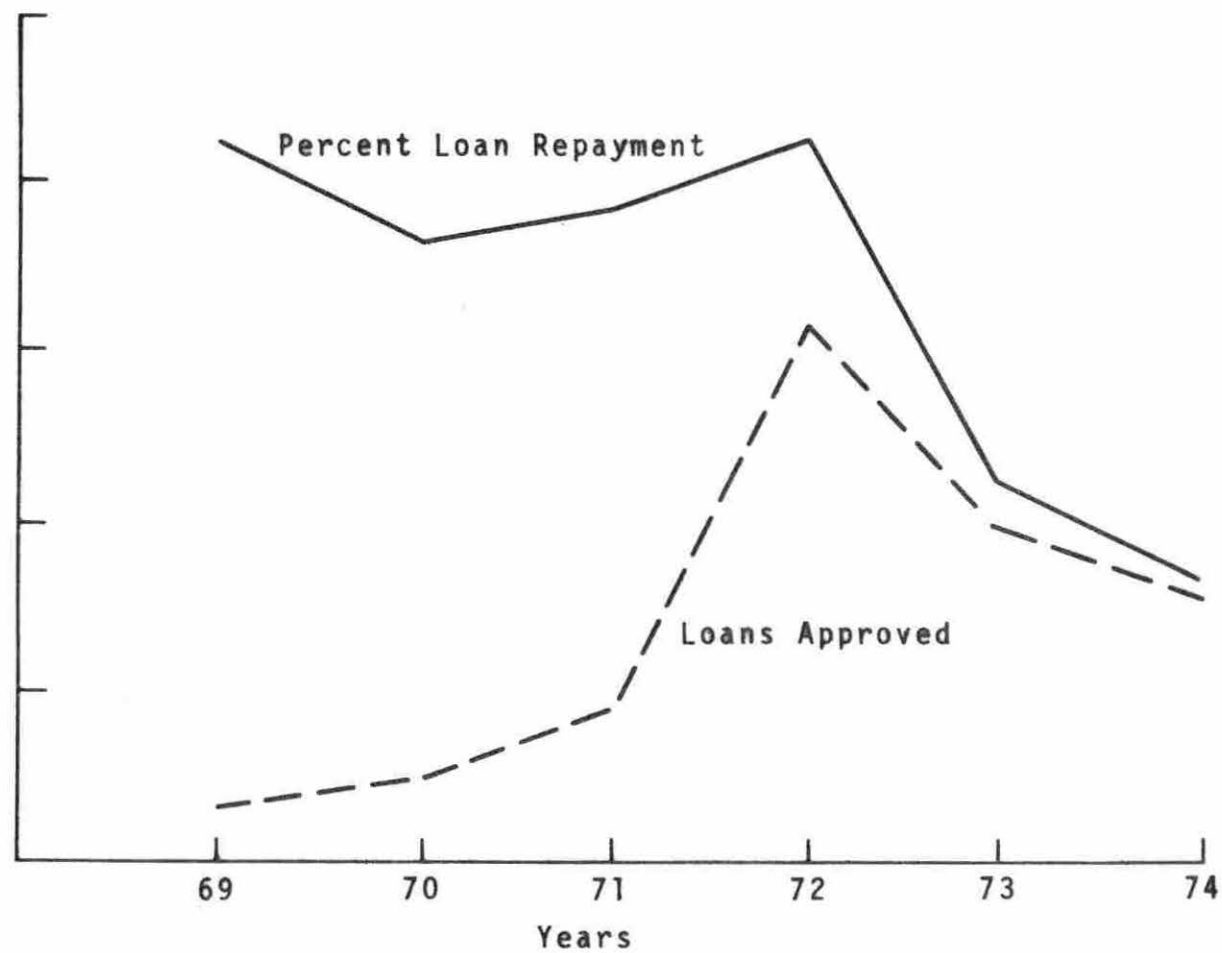


Figure 6. Relative performance of ADB percent loan repayment and loans approved 1969-1974

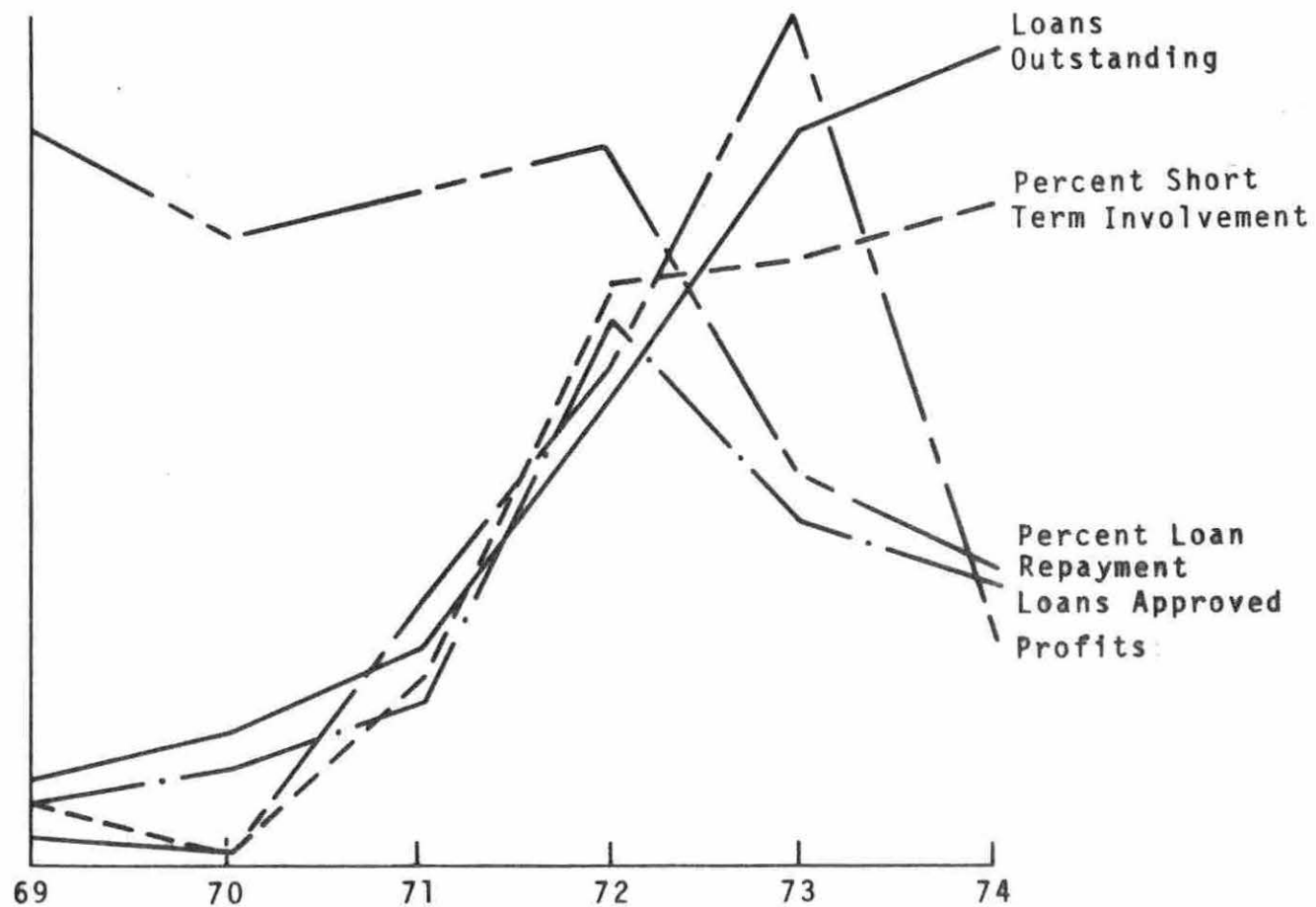


Figure 7. Relative performance of ADB loans outstanding, percent short-term investment, percent loan repayment, loans approved and profits 1969-1974

Table 16. Pearson correlation coefficients

	PROFITS	LO <sup>a</sup>	PR <sup>b</sup>	LA <sup>c</sup>	PSTI <sup>d</sup>
PROFITS	1.0000 ( 0) S=0.001 <sup>e</sup>	0.6714 ( 6) S=0.072	-0.3689 ( 6) S=0.236	0.7297 ( 6) S=0.050	0.7503 ( 6) S=0.043
LO	0.6714 ( 6) S=0.072	1.0000 ( 0) S=0.001	-0.8535 ( 6) S=0.015	0.6353 ( 6) S=0.088	0.9428 ( 6) S=0.002
PR	-0.3689 ( 6) S=0.236	-0.8535 ( 6) S=0.015	1.0000 ( 0) S=0.001	-0.1576 ( 6) S=0.383	-0.6315 ( 6) S=0.089
LA	0.7297 ( 6) S=0.050	0.6353 ( 6) S=0.088	-0.1576 ( 6) S=0.383	1.0000 ( 0) S=0.001	0.8395 ( 6) S=0.018
PSTI	0.7503 ( 6) S=0.043	0.9428 ( 6) S=0.002	-0.6315 ( 6) S=0.089	0.8395 ( 6) S=0.018	1.0000 ( 0) S=0.001

<sup>a</sup>LO = Loans Outstanding.

<sup>b</sup>PR = Percent Loan Repayment.

<sup>c</sup>LA = Loans Approved.

<sup>d</sup>PSTI = Percent Short-term Investment.

<sup>e</sup>The S under each coefficient is the one-tailed significance.

of the yearly periods of 1972 and 1973. The volume of loans approved on the other hand, increased more sharply than the volume of loans outstanding in 1972 but underwent a rather drastic decrease in the year 1973. This phenomenon caused the percent loan repayment for 1972 to proceed at about the same rate in 1972 as it had in 1971, but in 1973 the percent loan repayment figure underwent a drastic decline. The last year under consideration, the year 1974, saw a repeat of the same basic phenomenon; loans outstanding increased but at a decreased rate; percent loan repayment decreased but at a decreased rate; loans approved decreased but at a decreased rate.

The correlation coefficient given by Table 16 for percent short-term investment and loans approved over time was .8395 for the period 1969 through 1974. From 1969 through 1971, the yearly growth in loans approved was nearly constant (see Figure 6). In looking at the figures for percent short-term investment for the same period, there was a decrease in short-term investment in 1970, but in 1971 there was an increase. The year 1972 saw an almost equal increase in both short-term investment and loans approved, but the period 1973 through 1974 saw the rate of growth of short-term investment slacken, but remain positive, while the rates of growth for loans approved took a relatively sharper decline, with the larger increase coming in 1973.

Table 16 gives a correlation coefficient of .7297 for

profits and loans approved (see Figure 3). After undergoing a slight decline in 1970, profits continued at a rather steady rate of growth during 1971 through 1972. During the same period, loans approved sustained a rather steady rate of growth over the period of 1970 through 1971, growing at a slower rate than profits in 1971, but growing at a much faster rate in 1972. While loans approved took a sharp decline in the year 1973, profits accelerated its growth during the period, but took the most drastic fall of any variable of any period under consideration, including its own. Loans approved continued to decline during 1974 but at a slower pace.

b. Summary of the relationship of loans approved with loans outstanding, percent short-term investment, and profits  
In analyzing the graphical representation of the above variables in other countries, the period 1969 to 1972 appears to be the most relevant (see Figure 7). The relevancy comes from the fact that this is the period over which there was a continual increase in the money volume of loans approved. The year 1972 witnessed the greatest increase of the four year period. The year 1972 also happened to be the year in which there was a change in the government of Ghana. With the change in government the import substitution program known as "Operation Feed Yourself" also came into being.



One of the major areas of emphasis was the small-scale farmer. This is evidenced by the most drastic increase in short-term investment of any year of the period under consideration. If the situation of Ghana is characteristic of observations elsewhere, we would expect a noticeable increase in loan delinquency in the following years. Even though there was no quantitative measure of loan delinquency available, the ADB in its annual report for 1972 made mention of the increasing problem with loan recovery. The reasons given for this increase rate of loan delinquency were: (1) frequent shortages of basic inputs and equipment, (2) unfavorable weather conditions, and (3) inadequate marketing arrangements (1, p. 24).

The bank in 1973 responded with a decrease in the money volume of loans approved. Surprisingly, the reduction of the granting of loans was to the corporate sector and not the small-scale sector. The bank, in its 1973 report, subsequently named the agricultural corporate sector as the area in which loan delinquency was the greatest problem (2, p. 10). Consequently, the amounts relegated to short-term investment continued to increase in the years 1973 and 1974, but at levels consistent with the pre-1972 period. Again in 1974, the ADB in its annual report made mention of the problem of loan recovery (3, p. 20). To insure high recovery rates in the ensuing year, the bank established a Loans Recovery Division to deal solely with defaulting customers.

#### 4. Conclusion of the graphical relationship of loans approved and loan delinquency

Before the conclusion from the foregoing analysis is presented, certain ideas concerning the connection of theory and measurement should be clarified. By and large, three unavoidable difficulties may be said to justify a healthy skepticism regarding the reliability of empirical results. I refer specifically to the fact that all empirical work is tainted with each of the following errors: errors of measurement, sampling errors, and errors of specification (25, p. 33). Accordingly, a current U.S. Civil Service job classification handbook describes statistics as "the science of the collection, classification, and measured evaluation of the facts as a basis for inference (11, p. 5).

Probably one of the more important key words in the above definition of statistics is the word inference. Inferential (inductive) reasoning is a process of using a limited set of supposed facts to make a series of inferences about a universal concept. The inferences one might draw may be many, some nearly right but others very wrong. For this reason, inductive logic is never quite valid. By limiting itself only to available facts, it inevitably ignores some amount of conceivably relevant information (25, p. 5). With these ideas in mind, I proceed with the conclusion from my analysis.

The conclusion reached by the graphical analysis is con-

sistent with observations and case studies in other development situations. As the volume of loan expansion increased and more small-scale loans were approved, the problem of loan recovery became pronounced. Even though the staff of the ADB mentioned several times in its annual reports, a knowledge of the problems contingent with financing agriculture in a developing economy, planning was not considered to be one of those variables.

Because of the current importance attached to the problem of loan recovery in Ghana, as evidenced by a recent workshop on loan repayment at Kumasi, Ghana, it is evident that the efforts of the ADB's Loan Recovery Division were not as successful as anticipated. Upon examining the conference, it was noted that there was very little indigenous mention of an examination of an administrative or operational cause of loan repayment problems in Ghana. Most of the causes were farm level in nature. In noting this, an investigation was made of the operational structure of loan disbursement and retrieval of the ADB, with the Northern and Upper regions of Ghana as the major areas of consideration.

##### 5. Evaluation of the agricultural credit system of the ADB

Belshaw points out certain goals which an agricultural credit system should aim to satisfy (7, p. 83). They are:

1. Credit should be equally available on comparable terms in different areas and for different classes of borrowers

2. The cost of credit should be as cheap as practicable
3. Risk should be reduced, as far as practicable, to the borrower, to the credit institution, and to the lender
4. The timing of loans, amount, considerations of repayment, and other terms should be suited to the convenience of the borrower
5. The equity of the farmer must be conserved.

In the context of the above optimal criterion for an agricultural credit institution, the ADB and its associated policies and programs will be examined.

a. Equal availability of credit      Geographic expansion has been a recurrent objective throughout the history of the ADB. The expansion has reached the point of having at least one ADB branch in each region of the country. But due to the size of the regions such as the Northern and Upper regions, many farmers who live in the more remote areas, find it difficult to make use of the ADB's lending objectives and began to put more emphasis of the small-scale producer. Most of the thrust has been through the Commodity Group Credit Scheme, the features of which have been detailed above.

b. The cost of credit      A second aim of good agricultural credit system is that the cost of credit should be as cheap as possible. The cost of credit, as defined by the interest rate, has four main parts. They are: (1) a pure rate



of interest, (2) the cost of marketing and management of the credit enterprise, (3) a cost for risk and uncertainty, and (4) a monopoly element, in many cases, due to conditions of imperfect competition. The problem with the ADB's cost of credit was not that it was too high. From 1972 until recently, the rate of interest charged on agricultural loans given by the ADB, was pegged at six percent. This did not in any way take into consideration the part of the interest rate which allows for the inflation responsive cost of marketing and management functions of the ADB. Recent acknowledgement of this has prompted the raising of the interest rate charged on agricultural loans to 8.5 percent. It is hereby hoped that this will bring the cost of credit in line with actual expenditures.

c. Reduction of risks Risk is said to be of mainly of four types. They are; natural causes as risks, technical risks in areas of marketing, transport, technical inputs, and extension, commercial risks in the form of price fluctuations, and financial risks. Risk is also a main part of the cost of credit. Efforts on the part of the ADB to reduce risk have mainly aimed at the reduction of technical and commercial risks. Measures to reduce technical risks have been in the area of technical inputs in the form of improved seeds and fertilizer, but efforts at improving the extension staff have also been made. Measures to reduce commercial risk have



mainly concentrated on the guaranteeing or fixing of minimum prices by the government. Due to the nature of small scale agriculture, the pooling of risk through the use of the Commodity Group Credit Schemes, has also helped to reduce risk to the ADB.

6. Evaluation of the loanmaking procedures employed by the ADB

a. Timely disbursement of loans and collection      The nature of the farming activities of most of the crops observed in northern Ghana was annual. One would therefore expect that there would be an objective to fix the times of repayment and loan disbursal at the time when it is most appropriate to the producer; i.e. on an annual basis. This means that the yearly farming cycle must be coordinated with the appropriate amounts of credit for land preparation, planting, fertilizer, harvesting, et cetera. Figure 8 gives a schematic representation of the desirable and actual relationship between a hypothetical credit cycle of a credit institution, the actual credit cycle of the ADB in the Northern and Upper regions of Ghana, and the agricultural cycle found among the rice farmers in the Northern and Upper regions of Ghana. In the hypothesized relationship loans would be processed during the time that the land was being prepared for planting. (It is assumed here that either no capital expense is incurred

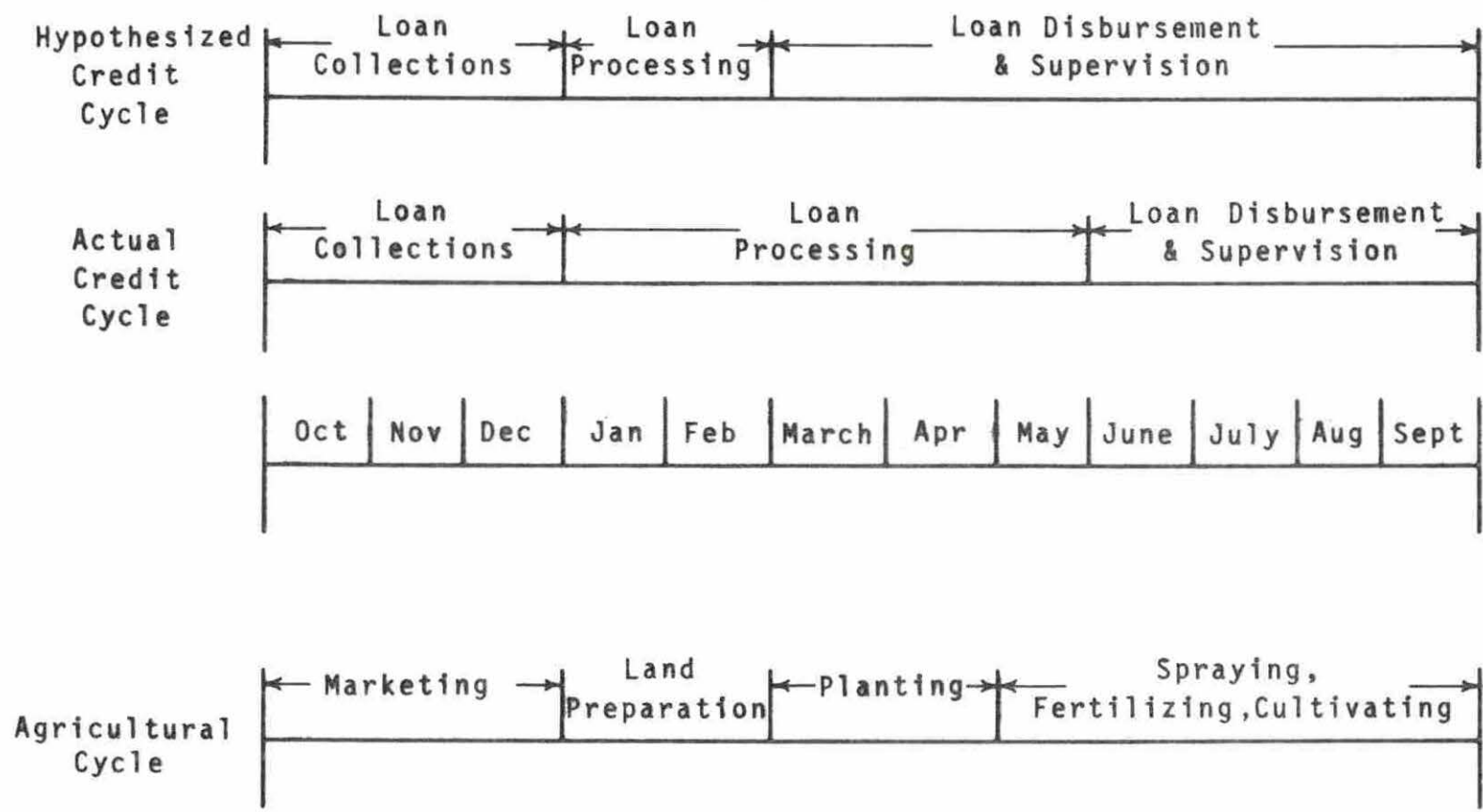


Figure 8. Coordinated cycle of credit and agriculture

during this period or that land clearing machinery would be available). Loan disbursement and supervision is coincidental with planting, spraying, fertilizer application and cultivating of the crop. The period of loan collection is then synchronized with the harvesting and the marketing of the crop.

In the same Figure 8, the more typical situation as witnessed in Northern Ghana is pictured. The period of loan processing lasted well into the planting season. Consequently, produce was planted late, thereby making the harvesting and marketing period incongruent with the collection period. Loan disbursement was three months behind schedule. In many cases it was found that if loans were received late, the proceeds were used for direct consumption, since there was no income from farming. Many of those who actually attempted to plant, had their fields burned by bush fires which were traditionally set each year as part of hunting game and land clearing operations.

Having looked at the efforts of untimely loan disbursements, the major cause appears to be one which is rather typical, when examining the same phenomenon in other development situations. The cause was primarily the lack of adequate loan processing help (although unavailability of plowing and harvesting equipment was the problem at times).

b. Provision of close supervision      Supervision as far as agricultural credit is concerned covers both field or extension personnel and also supervision on the part of the loan officers of the bank. In a previously mentioned study done by the Food and Agriculture Organization of the United Nations (1965), it was concluded that, even if all the various prerequisites for the development of agricultural credit were fulfilled, the lack of adequate trained staff in credit institutions and extension services presents a major obstacle to the effectiveness of any project to strengthen the credit structure (17, p. 12). This specific conclusion more specifically embraces the idea of quantity, but the same publication also brought attention to the idea of the quality of the agricultural bank staff and agricultural extension at all levels.

In reviewing the supervisory capacity in northern Ghana, the situation had not even advanced to the stage where quality became an issue. The previous discussion on the timely disbursement of loans and collection pointed to the extent to which the bank loan officers were overworked. The extension staff, which in some cases included some of the bank's loan officers, did fare much better. A major problem with the latter, though besides the lack of personnel, was the fact that the agricultural officers had to travel to the farms, whereas in the case of the loan officers, the farmers had to



travel to the bank. The remoteness of the two along with the quantitative lack of personnel made the provision of close supervision almost nil.

c. Amount of disbursement      Agricultural credit may be classified according to the purpose for which loans are raised, according to the length of the loan period, and according to the security against which loans are advanced. In grouping agricultural loans according to purpose, loans to purchase land and standing improvements, to provide permanent improvements and to purchase implements, correspond to what is known as investment credit. Loans to meet running expenses or the marketing of crops correspond to commercial credit (7, p. 73).

Under the ADB group loan schemes, which is the mode of lending primarily investigated, only the weeding and harvesting component of a loan is given in cash. In kind inputs are also a part of the total loan package, but the main consideration here is the cash input. In appraising the amount of loan disbursement, as well as other aspects of the ADB's loan-making procedures, a survey conducted by the author of this report, revealed that farmers recognized the insufficiency of the loan disbursement as a limiting factor to the ADB lending program. A closer examination of the possible uses of credit, according to the above classification, tended to throw



some doubt on that conclusion. It was found that since operating or "current expense" loans were the primary objective of the ADB's lending package, and since the basic production inputs of seed and fertilizer are heavily subsidized in Ghana, operating loans for those purposes were not deficient. of course, what did appear to be a problem was investment credit for the purchase of permanent improvements and large machinery. However, since the small farmer cannot efficiently utilize such large improvements, an analysis including the investment credit component, can be said to be inapplicable to the case at hand.

#### 7. Analysis of the problem (farm level)

a. Impact of the Commodity Group Lending Scheme on the rice farmers in the Upper region of Ghana The group lending schemes of the Upper region of Ghana were administered by the ADB branch at Bolgatanga (see Figure 2). Of the total number of farming groups administered by the bank, only five were formed as a rice farming group. Due to the relatively small number of these groups, a survey of these groups was conducted to outline the characteristics of the respective groups in the Upper region. The individual groups were the Nakapaya group, the So-Wungu group, the Bavognia group, the Bru-Navio group, and the Sumbrugu co-operative.

The Nakapaya group farm had five members, three of which

were interviewed. Since each group has a spokesman or group leader, the group leader was also included. All members of the Nakapaya group farm were male and the group had been formed in 1974. Excluding the group leader, the mean education level attained by the group members was less than a complete primary school education. The group leader had completed secondary school and had some technical school education. The mean number of years of farming in general was six years. Of this six years the mean number of years of rice farming experience was four years. Approximately two-thirds of the group had been engaged in rice farming before joining the group. Of the group members which had been engaged in rice farming before joining the group, the average yield per acre before joining the group was approximately sixteen bags of paddy per acre. The present yield per acre was 28 bags per acre. The mean approximate cost of joining the group, in the form of personal expenses was 55 cedis (¢1 (1976) = \$.87 (1976)). The form of land tenure was leasehold and the group had access to a tractor and a combine harvester.

The members of Nakapaya had never applied to the ADB for individual loans, but found ADB group lending procedures easier than commercial banking procedures. The majority of the group expressed the opinion that they would not have been able to obtain credit if there had not been the group credit scheme. The reason given by the members of the

group who thought that they would not have been able to obtain credit was that the collateral requirement of the local commercial banks could not be met. The group members on the average had been able to increase production by acreage expansion since joining the group. The average increase was 19 acres. The group had also been able to introduce some modern technology into its farming operations because of the access to machinery. In having this access, the group as a whole was able to effect changes in all phases of its operations, from land clearing to transportation of the harvested paddy to the rice mill. Probably for obvious reasons, then, it is not surprising to find that the members of this group rated the success of the Commodity Group Credit Scheme as good. The predominant reasons given for this affirmative response were financing and expertise. Attention should be brought to the fact that the group leader rated the success of the group as poor. His reason was that the lack of education and consequently understanding amongst members caused bottlenecks in group endeavors at times. The group unanimously showed a preference for institutional over non-institutional (money lenders, friends and relatives) borrowing. The group also thought that two improvements which could be made in the loan making procedures were in the areas of allowances for personal expenses and the extension of capital equipment loans to groups.



The individuals in the Nakapaya group marketed their crop with the government rice mill, but were generally not satisfied with the arrangement. The reasons given for this response were low prices, delays in payments and delays in transport to the mill. Since the individual members had joined the group, neither member had been delinquent on his loan repayment.

The So-Wungu group farm had five members, three of which were interviewed. The group leader was included in this three. The So-Wungu group farm had been formed in 1975 and all of its members were male. Excluding the group leader, the mean educational level attained by the group members was no schooling at all. The group leader had completed secondary school. Excluding the group leader, the group members had been farming all of their lives. However, they had only been rice farmers for one year. The group leader had only been farming for one year, and this had been as a rice farmer. Since the group was formed in 1975, there was no data on yield per acre performance. The major credit source of the individual members of the group before joining the group was the Agricultural Development Bank. The type of land tenure was leasehold. The So-Wungu group neither had access to nor owned any type of modern machinery. The group members could probably be characterized as near subsistence.

The individual members of the So-Wungu group had never

applied to the ADB for credit, but found the ADB lending procedures easier than commercial banking procedures. It was the majority opinion of the group that credit would have been available even if there had not been the Commodity Group Credit Scheme. This same majority listed the ADB as the source of individual credit. The group as a whole indicated that there had not been any expansion in production since the group was formed. This might just have been a reflection of the recent formation of the group. The group thought that the absence of modern technology in farming operations was a primary obstacle to increases in production. Members of the group generally rated the success of the Commodity Group Credit Scheme as poor, and cited the absence of capital financing as the main reason for their resultant poor appraisal. Institutional rather than non-institutional credit sources were preferred by the group. The group's suggested improvement in the ADB loan making procedures was that of the inclusion of capital equipment loans.

The group members marketed their crop through the ADB and were satisfied with the arrangement. The group members had been delinquent on the loan at least once. The reason was that the Ministry of Agriculture's tractor services had arrived too late.

The Bavognia group formed in 1975. During the interviewing the group leader was the spokesman for the group. The



group leader had completed a secondary education. For the group as a whole, of an average of twenty years of farming in general, fifteen of these years had been devoted to rice farming. Consequently, the group members had been rice farmers before joining the group. The average yield per acre for the year just prior to joining the group was ten bags per acre. The current yield per acre was twelve bags per acre. There was therefore an increase in yield to two bags per acre, since joining the group. The main source of financing before joining the group was from personal savings. The average approximate cost of joining the group was  $\phi 60$  and the type of tenure was leasehold. The group members had access to a tractor and combine harvester and individually owned a bullock plough.

The Bavognia group had generally not applied to the ADB for individual loans and would have generally not have been able to obtain credit if the Group Credit Scheme had not existed. The collateral requirement was listed as the major reason why credit could not have been obtained from an alternative source. The group members had been able to generally increase production since joining the group. These production increases came in the form of yield increases. The members were also able to introduce some modern technology into their operations because of access to the bank's tractor lending services. The yield increases in production was given as the reason for a rating of the success of the Group Credit

Scheme as good by the group members. The group members expressed a preference of non-institutional over institutional borrowing and suggested an increase in the size of the ADB loans as an improvement which could be made in ADB loan-making procedures. The group members marketed their crop through their own effort and generally were satisfied with the arrangement.

The Bru-Navio group had been formed originally in 1972. None of the group members had undergone any form of formal education. The general farming background of the group members was on the average twenty years, four of which had been in rice farming. In the year just prior to joining the group, the average yield per acre had been three bags of paddy per acre. The current average yield per acre among the members was estimated to eight bags per acre. The predominant source of credit before joining the group was from personal savings. The group members generally owned their own land and had access to a tractor and combine harvester.

The Bru-Navio group members had never applied to the ADB for an individual loan, but in having applied for a loan, the group members thought that ADB lending procedures were easier than commercial borrowing procedures. The group members had generally been able to expand production since joining the group. The expanded production was in the form of yield expansion. The amount of yield increase was five bags per

acre. The group had also been able to introduce some modern technology into their operations as a direct result of the ADB loan. The phases of operations affected were in ploughing and harvesting. The Bru-Navio group members rated the success of the group credit scheme as good. The reason given was that there had been an increase in production associated with the receiving of credit. The group also had a preference for institutional over non-institutional sources of credit. When asked about some suggested improvements in the ADB loan making procedures, the suggestion of the prompt or timely making of loans was made. The group members marketed their crop with the government rice mill, but were generally not satisfied with the arrangement. The reason given for dissatisfaction was the low prices were received for the output. The group had, on at least one occasion, been delinquent on their loan. This was because fire had destroyed their crop.

The Sumbrugu group had been formed in 1968. Although the majority of the group had no formal education at all, at least one member had obtained a night school education. The average number of years of farming was twenty-two, and of this total nine years had been devoted to rice farming. Consequently, the group members had generally been rice farmers before joining the group. The average yield per acre for the year just prior to forming the group was nine bags of paddy per acre. The current average yield was three bags of paddy per acre. The



members estimated that the cost of joining the group was ₦20 and also indicated that the type of land tenure was leasehold. Although the group had generally not applied to the ADB for individual loans, in actually going through the loan process as a group, the members were divided on whether the actual procedure of loan making used by the ADB was easier. The group also had access to a tractor.

It was the general opinion of the group that the members of the Sumbrugu group would not have been able to obtain credit if there had not been the Group Credit Scheme. The reason was that there would have been an inability to obtain credit from other sources because a collateral requirement could not be met. The group also felt that their expectations of future earnings were not generally predictable and cited availability as the obstacle. At least two members of the group had been able to increase production by way of acreage expansion. The average expansion was two and one-half acres. Also the introduction of some modern technology into their farming operations in the form of the access to a tractor, had affected the areas of ploughing, harrowing, and fertilizer application. The group as a whole rated the success of the Group Credit Scheme as good, and cited technical assistance and machinery access as the reasons for their rating. Institutional rather than non-institutional credit was the preference of the group. The group marketed their crop with the

government rice mill and the members were generally satisfied with the arrangement. The group had never been delinquent on its loan.

b. Summary and conclusions of the impact of credit on the rice farming groups of the Upper region of Ghana In assessing the performance of rice groups in the Upper region of Ghana, the Nakapaya group appears to have been the most successful. In assessing the dominant reasons for this group's success over the others, several aspects stand out. Probably the most prominent aspect was internal organization. The Nakapaya group leader had been a technical officer and had received a secondary education. Even the group members were aware of the impact of the group leader's expertise on the successful performance of the group. Interestingly enough though, the group leader expressed the opinion that the success of the Group Credit Scheme was poor, and the reason given was that there was a general lack of education among the group members which brought about failures in farm operations. Beyond the issues of technical expertise and education, the Nakapaya group leader owned a tractor himself and therefore did not have to depend on the Ministry's tractor lending services, which came too late. In having access to the technology, the Nakapaya group was able to affect all areas of its operations from land clearing to transport to the mill.



In assessing the impact of credit on the groups in general, probably one of the more interesting responses was that in no case had any of the group members ever applied to the ADB for individual loans. In two of the five groups, it was expressed that there would have been an ability to obtain credit even if there had not been the Group Credit Scheme. Four out of five groups indicated that their main source of finance before joining the group was through their own savings. Four of the five groups had been able to expand production since forming the group and in the case of the group which could not expand production, the reason given was that the technology was not readily available. Institutional as opposed to non-institutional borrowing was the unanimous preference among groups and the suggested improvements in the ADB loan making procedures, as expressed by the respective groups were the extension of loans to cover personal expenses, the extension of capital equipment loans, improved technology availability in the form of tractor, and prompt loan making. Two of the five groups had at one time been delinquent on their loans. In one case tractor services had been received too late and in the other case a fire had destroyed the crop. In conclusion, the most dominant factors in the success of rice farming groups in the Upper region of Ghana were education, technical expertise, mechanization and prompt loan making.

## V. CONCLUSIONS ON AGRICULTURAL CREDIT IN GHANA

### A. Summary on Agricultural Credit in Ghana

A more pressing obstacle to the establishment of a sound agricultural credit program in Ghana is that of loan repayment. Various country case studies of the phenomenon have linked the cause of loan repayment problems with the diseconomies of scale associated with the expansion of credit accessibility. Current analyses of the problem by government planners stress farm level causes as the primary contributors to the problem. Readings of the subject of project planning in developing countries have pointed to errors in planning assumptions and operation assumptions as a typical cause of the limited success achieved by development projects. In furthering the analysis, a list of the aims of a good agricultural credit system were evaluated, using the Agricultural development Bank of Ghana. Attention was brought to accessibility of credit, the cost of credit, the reduction of risk and the terms of loans.

A graphical analysis of the operations of the ADB over time, tended to support the case study observations of loan repayment. As the agricultural credit program reached more borrowers, loan repayment began to decrease. Credit was accessible in each region of the country, but discrimination against residents of the more remote areas did exist. Access-

ibility, in the form of goals did exist, in that geographic expansion was a major objective of the ADB. After initiating a recent increase in the interest rate on agricultural loans, the costs of credit to agricultural borrowers has been brought into line with other forms of credit extended by the ADB. The reduction of risks to the borrower came in the areas of technical risk reduction and commercial risk reduction. Technical risk reduction was limited by insufficient transport facilities and extension staff. Prices obtained for produce were also lower than those which could be obtained from sources other than the government. Commercial risk reduction attempts took the form of the establishment of minimum prices by the government. Although this provided some price stability, farmers in the area viewed the prices as being too low. Reduction of risk to the ADB itself, mainly came as a result of the Commodity Group Credit Scheme. The major form of risk reduction to the ADB was in the area of security for the loan, the provision for repayment, and the pooling of risk. Attention was brought to timely disbursement of loans and collections, provision of close supervision, follow-up work to ensure repayment, and the amount of disbursement. The first three areas were found to be suboptimal with the major cause being the lack of proper staff. The amount of disbursement was found to be appropriate for production expenses only.

The conclusions reached from the analysis in this paper



primarily have implications for policy. Currently there is the tendency for project designers in Ghana to proceed on intuition, which is probably a significant element in explaining the over expansion of credit, which had led to loan repayment problems. Little or no consideration was given to socio-economic and cultural variables. To aggravate conditions even more, there were no feed-back mechanisms, making one wonder how a systematic solution could ultimately be reached.

#### B. Prospects for Additional Research

As is probably most vividly exemplified by this study, data for the statistical analysis of loan repayment problems in Ghana are virtually non-existent. Consequently, any prospects for additional research into the area of loan repayment, must consider data gathering as a prerequisite to any approach to the problem. Therefore, one area into which additional research is needed is the area of agricultural credit itself, but note should be taken of the urgency of an integrated and comprehensive approach to the problem. A Food and Agriculture Organization study, in 1965, stated the conclusion that "it is impossible to solve the credit problem in any developing country without tackling, at the same time, marketing and supply" (18, p. 162). There are of course, other areas which need investigation, but the most urgent area in the field of agriculture is the area of credit, along with agricultural marketing and supply.

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VII. APPENDIX

Table 17. Sumbrugu Rice Group General Demographics  
(Consensus Response)

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1.	Sex of group members	<u>male</u>
2.	Year group formed	<u>1972</u>
3.	Number of years of education (excluding group leader <sup>a</sup> )	<u>1</u>
4.	Number of years of education of group leader <sup>b</sup>	<u>4</u>
5.	Number of years as a farmer	<u>22</u>
6.	Number of years as a farmer (rice)	<u>9</u>
7.	Yield per acre for the year prior to group formation	<u>9 bags of paddy</u>
8.	Current yield per acre	<u>3 bags of paddy</u>
9.	Average approximate cost of joining the group	<u>₹20</u>
10.	Type of land tenure	<u>leasehold</u>
11.	Equipment which the group had access to	<u>tractor</u>

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<sup>a</sup><sub>1</sub> = no schooling at all.

<sup>b</sup><sub>4</sub> = at least a secondary education.



Table 18. Sumbrugu Rice Group Credit Impact Demographics  
(Consensus)

---

1.	Ever applied to the ADB for an individual loan	<u>no</u>
2.	Other sources of credit	<u>no</u>
3.	Major obstacle to obtaining credit (if any)	<u>collateral</u>
4.	Increase in production since joining the group	<u>yes</u>
5.	Average increase in production (if any)	<u>Increases in acreages</u>
6.	Changes effected in phases of farm operations	<u>yes</u>
7.	Rating of the success of the Group Credit Scheme	<u>good</u>
8.	Reasons given for rating of Group Credit Scheme	<u>technical assistance, machinery access</u>
9.	Preferences for institutional vs. non-institutional borrowing	<u>institutional</u>
10.	Suggested improvements in the ADB loan-making procedures	<u>none</u>
11.	Method of marketing crop	<u>government rice mill</u>
12.	Satisfaction with the marketing arrangement	<u>yes</u>
13.	Reason for dissatisfaction (if any)	<u>N/A</u>
14.	Loan ever delinquent	<u>no</u>
15.	Reason (if any)	<u>N/A</u>

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Table 19. Bru-Navio Rice Group General Demographics  
(Consensus Response)

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1.	Sex of group members	<u>male</u>
2.	Year group formed	<u>1972</u>
3.	Number of years of education (excluding group <sup>a</sup> leader)	<u>1</u>
4.	Number of years of education of group leader <sup>a</sup>	<u>1</u>
5.	Number of years as a farmer	<u>20</u>
6.	Number of years as a rice farmer	<u>4</u>
7.	Yield per acre for the year prior to group formation	<u>3 bags of paddy</u>
8.	Current yield per acre	<u>8 bags of paddy</u>
9.	Average approximate cost of joining the group	<u>no response</u>
10.	Type of land tenure	<u>private ownership</u>
11.	Equipment which the group had access to	<u>tractor and combine harvester</u>

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<sup>a</sup>1 = no schooling at all.

Table 20. Bru-Navio Rice Group Credit Impact Demographics  
(Consensus Response)

---

1.	Ever applied to the ADB for an individual loan	<u>no</u>
2.	Other sources of credit	<u>yes</u>
3.	Major obstacle to obtaining credit (if any)	<u>N/A</u>
4.	Increase in production since joining the group	<u>yes</u>
5.	Average increase in production (if any)	<u>5 bags of paddy</u>
6.	Changes effected in phases of farm operations	<u>yes</u>
7.	Rating of the success of the Group Credit Scheme	<u>good</u>
8.	Reasons given for rating of Group Credit Scheme	<u>Increase in production</u>
9.	Preferences for institutional vs. non-institutional borrowing	<u>institutional</u>
10.	Suggested improvements in the ADB loan-making procedures	<u>timely loan-making</u>
11.	Method of marketing crop	<u>government rice mill</u>
12.	Satisfaction with the marketing arrangement	<u>no</u>
13.	Reason for dissatisfaction (if any)	<u>low prices</u>
14.	Loan ever delinquent	<u>yes</u>
15.	Reason (if any)	<u>fire destroyed crop</u>

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Table 21. Bavognia Rice Group Demographics (Consensus Response)

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1.	Sex of group members	<u>male</u>
2.	Year group formed	<u>1975</u>
3.	Number of years of education (excluding group leader)	<u>1</u>
4.	Number of years of education of group leader	<u>4</u>
5.	Number of years as a farmer	<u>20</u>
6.	Number of years as a farmer (rice)	<u>15</u>
7.	Yield per acre for the year prior to group formation	<u>10 bags of paddy</u>
8.	Current yield per acre	<u>12 bags of paddy</u>
9.	Average approximate cost of joining the group	<u>₱60</u>
10.	Type of land tenure	<u>leasehold</u>
11.	Equipment which the group had access to	tractor and combine <u>harvester</u>

---

<sup>a</sup><sub>1</sub> = no schooling.

<sup>b</sup><sub>4</sub> = completed secondary school.



Table 22. Bavognia Rice Group Credit Impact Demographics  
(Consensus Response)

---

1.	Ever applied to the ADB for an individual loan	<u>no</u>
2.	Other sources of credit	<u>no</u>
3.	Major obstacle to obtaining credit (if any)	<u>collateral</u>
4.	Increase in production since joining the group	<u>yes</u>
5.	Average increase in production (if any) 2 bags of paddy per acre	
6.	Changes effected in phases of farm operations	<u>yes</u>
7.	Rating of the success of the Group Credit Scheme	<u>good</u>
8.	Reasons given for rating of Group Credit Scheme Increase in production	
9.	Preferences for institutional vs. non-institutional borrowing	<u>institutional</u>
10.	Suggested improvements in the ADB loan-making procedures	<u>larger loans</u>
11.	Method of marketing crop	<u>own effort</u>
12.	Satisfaction with the marketing arrangement	<u>yes</u>
13.	Reason for dissatisfaction (if any)	<u>N/A</u>
14.	Loan ever delinquent	<u>no</u>
15.	Reason (if any)	<u>N/A</u>

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Table 23. So-Wungo Rice Group Demographics (Consensus Response)

---

1.	Sex of group	<u>male</u>
2.	Year group formed	<u>1975</u>
3.	Number of years of education excluding group leader <sup>a</sup>	<u>1</u>
4.	Number of years of education of group leader <sup>b</sup>	<u>4</u>
5.	Number of years as a farmer	<u>lifetime</u>
6.	Number of years as a farmer (rice)	<u>1</u>
7.	Yield per acre for the year prior to group formation	<u>no response</u>
8.	Current yield per acre	<u>no response</u>
9.	Average approximate cost of joining the group	<u>no response</u>
10.	Type of land tenure	<u>leasehold</u>
11.	Equipment which the group had access to	<u>none</u>

---

<sup>a</sup><sub>1</sub> = no schooling at all.

<sup>b</sup><sub>4</sub> = completed secondary school.

Table 24. So-Wungo Rice Group Credit Impact Demographics  
(Consensus Response)

---

1.	Ever applied to the ADB for an individual loan	<u>no</u>
2.	Other sources of credit	<u>yes</u>
3.	Major obstacle to obtaining credit (if any)	<u>N/A</u>
4.	Increase in production since joining the group	<u>no</u>
5.	Average increase in production (if any)	<u>N/A</u>
6.	Changes effected in phases of farm operations	<u>none</u>
7.	Rating of the success of the Group Credit Scheme	<u>poor</u>
8.	Reasons given for rating of Group Credit Scheme	
	<u>lack of capital, equipment financing</u>	
9.	Preferences for institutional vs. non-institutional borrowing	<u>institutional</u>
10.	Suggested improvements in the ADB loan-making procedures	
	<u>inclusion of capital equipment loans</u>	
11.	Method of marketing crop	<u>through ADB</u>
12.	Satisfaction with the marketing arrangement	<u>yes</u>
13.	Reason for dissatisfaction (if any)	<u>N/A</u>
14.	Loan ever delinquent	<u>yes</u>
15.	Reason (if any)	<u>tractor services arrived too late</u>

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Table 25. Nakapaya Rice Group General Demographics  
(Consensus Response)

1.	Sex of group members	<u>male</u>
2.	Year group formed	<u>1974</u>
3.	Number of years of education (excluding group leader) <sup>a</sup>	<u>2</u>
4.	Number of years of education of group leader <sup>b</sup>	<u>4</u>
5.	Number of years as a farmer	<u>6</u>
6.	Number of years as a farmer (rice)	<u>4</u>
7.	Yield per acre for the year prior to group formation	<u>16 bags of paddy</u>
8.	Current yield per acre	<u>28 bags of paddy</u>
9.	Average approximate cost of joining the group	<u>₱55</u>
10.	Type of land tenure	<u>leasehold</u>
11.	Equipment which the group had access to	<u>tractor and combine harvester</u>

<sup>a</sup>2 = less than a complete primary education.

<sup>b</sup>4 = completed secondary school.



Table 26. Nakapaya Rice Group Credit Impact Demographics  
(Consensus Response)

---

1.	Ever applied to the ADB for an individual loan	<u>no</u>
2.	Other sources of credit	<u>no</u>
3.	Major obstacle to obtaining credit (if any)	<u>collateral</u>
4.	Increase in production since joining the group	<u>yes</u>
5.	Average increase in production (if any)	<u>acreage expansion of 19 acres</u>
6.	Changes effected in phases of farm operations	<u>yes</u>
7.	Rating of the success of the Group Credit Scheme	<u>good</u>
8.	Reasons given for rating of Group Credit Scheme	<u>financing expertise</u>
9.	Preferences for institutional vs. non-institutional	<u>institutional</u>
10.	Suggested improvements in the ADB loan-making procedures	<u>allowances for personal expenses and capital equipment loans</u>
11.	Method of marketing crop	<u>government rice mill</u>
12.	Satisfaction with the marketing arrangement	<u>no</u>
13.	Reason for dissatisfaction (if any)	<u>low prices delays in payments</u>
14.	Loan ever delinquent	<u>no</u>
15.	Reason (if any)	<u>N/A</u>

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