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Kenya: Appraisal of Group Farms Rehabilitation Project

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Agricultural Credit & Livestock Division
Eastern Africa Region

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CURRENCY EQUIVALENTS

| | | |
|-------|---|-------------|
| 1 Ksh | = | 100 K cents |
| 1 Ksh | = | US\$0.14 |
| US\$1 | = | 7.14 Ksh |

WEIGHTS AND MEASURES

| | | |
|--|---|--|
| 1 Acre (ac) | = | 0.405 Hectares |
| 1 Mile | = | 1.609 Kilometers |
| 1 Square Mile | = | 2.590 Square Kilometers (km ²) |
| 1 Pound | = | 0.453 Kilograms |
| 1 Long Ton | = | 1.016 Metric Tons |
| 1 Kilometer (km) | = | 0.62 miles |
| 1 Hectare (ha) | = | 2.471 acres |
| 1 Square Kilometer (km ²) | = | 0.386 square miles |
| 1 Ton (metric) | = | 2,205 (1,000 kg) |
| 1 bag maize or wheat | = | 90 kg |

ABBREVIATIONS

| | | |
|------|---|-----------------------------------|
| AFC | - | Agricultural Finance Corporation |
| EAA | - | East African Acceptances |
| KCC | - | Kenya Cooperative Creameries |
| KPCV | - | Kenya Producers Cooperative Union |

FISCAL YEAR

AFC - April 1 - March 31

KENYA

GROUP FARMS REHABILITATION PROJECT

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KENYA

GROUP FARMS REHABILITATION PROJECT

SUMMARY AND CONCLUSIONS

i. Agriculture remains by far the most important part of the Kenyan economy; it contributes the largest portion of GNP and exports and employs an overwhelming proportion of the labor force. Prior to about 1960, the agricultural sector mainly comprised large-scale commercially oriented mixed farms and estates owned by Europeans and small-scale subsistence farms owned by African farmers. During the early 1960's, both before and after independence, most of the large-scale farms were either subdivided and settled as small-scale individual farms or transferred intact to African ownership. Those transferred intact were mostly purchased by groups of up to several hundred small farmers or landless persons who banded together because of their limited individual resources; most large-scale farms are thus cooperative type group farms owned and operated by small landowners. The large-scale farms continue to be vital to the economy of Kenya as they produce about 48% of gross marketed production. Overall, large-scale group farming has been reasonably successful but many of these farms are producing at much below their potential because of constraints of finance and management. Rehabilitation of these less successful farms is important to Government's objectives of increasing the commercial production of important commodities, of ensuring adequate basic food supplies for the non-farm population, of improving a difficult balance of payments position and of helping lower income groups now at subsistence levels. These benefits can be obtained at comparatively low cost because of the substantial existing but largely unutilized investments such as fencing, water and buildings.

ii. The proposed Project would aid in the rehabilitation of 90 mixed crop and livestock farms in the Rift Valley Province as well as 36 coffee estates in the Central Province. It would provide assistance to selected group farms transferred to Kenyan ownership during the 1960's as part of the land transfer program which are now in need of credit and improved management services. Under the Project medium and long-term loans and working capital would be provided to the farms for investments in machinery, equipment, infrastructure and inputs such as fertilizer and insecticides. In order to provide the improved management services essential to the rehabilitation effort, a Farm Management Section would be established within the Agricultural Finance Corporation (AFC) which would recruit and employ resident farm managers for each of the mixed farms. Under a loan agreement to be signed between AFC and the group owners, the owners would agree to carry out a development plan approved by AFC, to establish a Farm Committee (comprising AFC, Ministry of Agriculture and two owners) to be responsible for farm decisions and to employ a manager acceptable to AFC and who would be supervised by AFC's Farm Management Section. East African Acceptances Ltd. (EAA), a financial institution incorporated in Kenya, or other management companies

or agent would provide management services and possibly working capital to the coffee estates.

iii. AFC would be directly responsible for Project implementation, although overall direction would be by a Project Steering Committee. The Ministry of Agriculture together with District Rehabilitation Committees would aid in the preliminary selection of mixed farms and would provide them with training as well as agricultural extension services. AFC's Large Farm Management Section would review and amend preliminary plans prepared by the Ministry of Agriculture to finally determine which farms would be suitable. Provided the farm owners approved, AFC would then finalize the necessary agreements and a resident manager satisfactory to AFC would be appointed. AFC would employ a number of experienced senior staff to supervise the resident managers and overall development. Initial selection of the coffee estates would be made by AFC assisted by the District Rehabilitation Committee. AFC, with the owners' consent, would then negotiate a management agreement between the owners and EAA or another management group. The Project would also provide for a training program for mixed farm managers, a large farm rehabilitation study, Project evaluation and future Project preparation.

iv. A Bank loan of US\$7.5 million and an IDA credit of US\$7.5 million are proposed which would cover the foreign exchange component (US\$10.1 million) and about 37% of local costs over the five-year period. This would represent 65% of total Project costs of Ksh 166 million (US\$23.2 million). As a percentage of Bank/IDA disbursements, the Government would contribute US\$3.7 million. The remaining US\$4.5 million would also be the responsibility of the Government; however, these funds are required for working capital for 27 of the 36 coffee estates and Government hopes to persuade EAA or other management companies to provide at least part of these funds in addition to their management expertise. About US\$15 million from the IDA and Government contributions would be on-lent to AFC at 3% per annum for a term of 30 years including a three-year grace period; AFC would on-lend loan funds to the group farmers at its normal rate of 9% p.a. Funds lent from Government or the management companies for working capital to the coffee estates would be at the current commercial rate. The items to be procured under the Project would be required at scattered locations and at varying times throughout the Project period, thus making them unsuitable for international competitive bidding. Purchases would therefore be made through normal commercial channels, as local supplies are adequate and prices generally competitive.

v. At full development (year 6), the annual gross incremental marketed production resulting from the Project would be 16,500 tons of wheat, 7,500 tons of maize, 3,300 tons of coffee, and 17,500 tons of milk. The total gross value of this incremental production would be Ksh 72.9 million (US\$10.1 million); most of this increased value would be attributable to coffee (Ksh 32.0 million), milk and surplus cattle (Ksh 16.9 million), wheat (Ksh 19.7 million) and maize (Ksh 4.7 million).

vi. The economic rate of return of the Project would be 42% over a twenty-year period. Individual rates of return for the coffee estates and the mixed farms are 54% and 29% respectively. The most important factor in

determining the success of the rehabilitation effort would be the ability of the farms to attract and hold highly qualified management staff. Management risks are extremely difficult to evaluate, however, and for this reason were not included in the sensitivity analysis. The major quantifiable risk facing the Project would be an increase in the cost of inputs without a corresponding increase in farmgate prices. This risk is particularly important in view of the sensitivity analysis which indicates that 10% increase in the cost of inputs for mixed farms would reduce the return from 29% to 19%, while a 10% reduction in production would reduce the return to 20%. Returns from coffee estates would not be as sensitive to changes in costs or benefits.

vii. The Project would ensure employment, either permanent or seasonal depending on the number of group owners involved, for about 12,600 farm families within the large farm sector. The Project would thus affect a total population of about 80,000 persons. These families are at present at the lower income levels of the rural population. At full development each family would receive, in addition to its subsistence income and earning from labor of about Ksh 200 p.a., an annual cash income from profits of Ksh 600 on the mixed farms and Ksh 3,000 on the coffee estates; this would be equivalent to per capita incomes of Ksh 250 and Ksh 650. The current average per capita agricultural income, including subsistence, of a rural family in Kenya is estimated at Ksh 480 (US\$70) per annum while the countrywide average is estimated at Ksh 1,060 (US\$150).

viii. Since 1960 the Bank Group has extended nine other loans or credits totalling US\$56.2 million to assist Kenya's agricultural sector. These include a loan in 1964 to assist the Kenya settlement program, and two credits to finance agricultural credit to finance on-farm development. The livestock industry has been assisted by two credits for ranch development, and the development of infrastructure. In addition two credits were extended for the development of smallholder tea production and a loan for the construction of tea factories. In 1970 a loan was extended for afforestation for saw-wood and pulpwood production. In general all projects were well executed, although there were substantial delays in the first agricultural credit and the first livestock projects due to institutional problems.

ix. The proposed Project is suitable for an IDA credit of US\$7.5 million on the usual terms and a Bank loan of US\$7.5 million for a period of 25 years including a 5-year grace period. The borrower would be the Government of Kenya.

KENYA

GROUP FARMS REHABILITATION PROJECT

I. INTRODUCTION

1.01 Agriculture remains by far the most important part of the Kenyan economy; it contributes the largest portion of GNP and exports and employs an overwhelming proportion of the labor force. Prior to about 1960, the agricultural sector mainly comprised large-scale commercially oriented mixed farms and estates owned by Europeans and small-scale subsistence farms owned by African farmers. During the early 1960's, both before and after independence, most of the large-scale farms were either subdivided and settled as small-scale individual farms or transferred intact to African ownership. Those transferred intact were mostly purchased by groups of up to several hundred small farmers or landless persons who banded together because of their limited individual resources; most large-scale farms are thus cooperative type group farms owned and operated by small landowners. The large-scale farms continue to be vital to the economy of Kenya as they produce about 48% of gross marketed production being particularly important for the production of wheat which is not well suited in Kenya to small-scale production. Overall, large-scale group farming, which has had Government's support but limited financial subsidy, has been reasonably successful but many of the large-scale farms are producing at much below their potential because of constraints of finance and management. Rehabilitation of these less successful farms is important to Government's strategy of producing sufficient basic foodstuffs for the non-farm population, in reducing imports and increasing exports to improve a difficult balance of payments position and in helping lower income groups. These benefits can be obtained at comparatively low cost because of the substantial existing but largely unutilized investments such as fencing, water and buildings. The proposed project would assist Government's policy by rehabilitating through provision of credit and management, a number of mixed cereal and livestock farms and coffee estates.

1.02 Since 1960 the Bank Group has extended nine loans or credits totaling US\$56.2 million to assist Kenya's agricultural sector. These include a loan in 1964 of US\$2.6 million to assist the Kenya settlement program, and two credits in 1967 and 1972 to support an agricultural credit program financing on-farm development. The livestock industry has been assisted by two credits for ranch development, meat processing and the development of infrastructure. In addition two credits were extended for the development of smallholder tea production and a loan for the construction of tea factories. Also, a loan was extended for afforestation for saw-wood and pulpwood production. In general all projects have been well executed, although there were substantial delays in the first agricultural credit and the first livestock projects due to institutional problems. In 1974 a Bank agricultural sector survey was completed, and this will assist in identifying future needs for agriculture in Kenya.

1.03 The Project was prepared by Government with assistance from the IBRD Regional Mission in East Africa (RMEA). This report is based on the findings of a Bank/IDA appraisal mission which visited Kenya in April-May 1974 composed of Messrs. D. B. Argyle, T. Baddar, G. R. Henderson and A. Marot.

II. BACKGROUND

A. General

2.01 Lying astride the equator on the eastern coast of Africa, Kenya has a total area of 583,000 km² and is a country of striking topographical and climatic variety. The population is now estimated at 12.1 million and is growing at a rate of about 3.3% per year. About 90% of the population lives in rural areas and is dependent on agriculture for its livelihood. The average annual per capita income of those living in rural areas is now estimated at Ksh 480 (US\$70), and the countrywide average at Ksh 1,060 (US\$150).

2.02 The agricultural sector (Annex 1) is of great importance to the economy, and contributed between 35% and 40% of GDP in the 1964-1971 period. The overall rate of growth in the sector over the same period was about 4.3% in real terms, a little above population growth. Agriculture accounts for about 70% of total export earnings; the latter increased from Ksh 740 million to Ksh 1,000 million in the period 1965-1971. The main export crops are coffee and tea - which account for about 64% of all agricultural exports - sisal, pyrethrum, dairy products, meat, cotton, wool, nuts and animal feed. Subsistence cultivation accounts for over half of total agricultural production, and the major subsistence foodcrops are maize, bananas, sorghum, millet and pulses.

2.03 About 20% of Kenya's total land area of 58 million ha is of high or medium cropping or livestock potential; these areas include the highlands and the coastal belt regions. A further 10% is suitable for subsistence dry-land farming and cattle ranching, while the rest is only suitable for extensive production of livestock for both commercial and subsistence needs.

2.04 Rainfall varies greatly in Kenya from less than 250 mm per annum in the Northern deserts to 1,900 mm per annum in the Western Highlands in the vicinity of Lake Victoria. In the Rift Valley where the majority of the large-scale mixed farms are located, there is a four month dry period from November through February and rainfall averages around 1,100 mm with local variations due to altitude and rain shadows. Annual variations are quite high with partial crop failures occurring approximately every ten years. The soils of the Rift Valley area vary from deep, well-drained dark red friable loams to lateritic soils sometimes with impeded drainage. They are mostly phosphate deficient and acid, and consequently the poorer soils require annual dressings of fertilizer to maintain high crop yields.

B. The Farming Sector

2.05 There are an estimated 1.2 million smallholder farmers in Kenya, the majority of which live at subsistence levels and farm on average less than 2 ha. About 450,000 of these smallholders can be classified as progressive farmers, although the degree of production above subsistence varies considerably. The rural areas also contain approximately 200,000 pastoralists and another 300,000 families without direct access to land.

2.06 In addition to smallholder farming, there is also an important large-scale commercial farm subsector. African participation in commercial farming has increased significantly over the past decade. In 1960 Government instituted a comprehensive land transfer program for mixed farms whereby high potential agricultural land occupied by European owners (mainly in the Rift Valley Province) was transferred to Kenyan ownership. There were two main types of transfer: first, a settlement program under which large farms were subdivided into productive smallholder plots; and second, the direct transfer of large farms to individuals, groups (partnerships, companies or cooperatives) and quasi-government authorities such as the Agricultural Development Corporation. Group ownership is now the most common form of ownership of large farms. The result was a complex pattern of land ownership with a wide range in the size of holdings, forms of ownership and patterns of production. It is estimated that there are now approximately 2,750 large farms (over 20 ha), about 10% of which are still owned and farmed by expatriates. About 1,800 holdings are mixed farms and the remainder are coffee and tea estates and ranches. As a result of the successful land adjudication, transfer and settlement programs, Kenya's land holdings have a higher proportion of surveyed and registered titles than is generally the case in similar countries in Eastern Africa.

Large-Scale Mixed Farms

2.07 The organization and production of these large-scale farms vary with the form of ownership. The majority of the farms have been purchased from their former European owners by groups organized variously as partnerships (the maximum number of legal members is seven) private companies (maximum number of legal members is fifty), or informal cooperatives (often with absentee as well as resident partners). Group ownership represented a way in which small farmers with limited capital were able to purchase large farms from their previous owners. Usually the group owners had barely enough money for the purchase deposit, and consequently most of these purchases were financed by the Agricultural Finance Corporation (AFC). In many cases these farms had suffered from a lack of working capital and financial difficulties and have encouraged other people to join the farms for a cash settlement. Since these contributions were made through original owners registered in the title deeds, the new members have no legal status, i.e., they are unregistered. While generally these unregistered members have commonly accepted ownership rights, their position is tenuous and they often have little say in management and are discriminated against in other ways.

2.08 Of the 1,800 mixed farms owned by Africans in high potential areas, it is estimated that about one third are well run and have a rising output, one-third are perhaps breaking even but have not increased their total production since the change in ownership, and the remaining one-third are "problem farms" (para 2.09) facing severe financial and production difficulties. A recent study of a sample of farms in the Trans Nzoia District showed that on average the least successful group cropped only 16% of the total farm land (or 30% of arable land). The performance of group-owned farms was generally far below that of the individually-owned farms; the group farms had an average of 13.4% of their farm area under crops as compared with 37.4% for the single owner farms.

2.09 The great majority of problem farms are group-owned. The average farm size is around 600 ha, and the main crops are wheat and maize along with some dairy cattle. These farms are characterized by substantial debts, lack of working capital and by poor management (due to the inability or unwillingness of the owners to pay for skilled managers) and dissension among the owners leading to vacillation and lack of policy direction. This lack of funds and poor management have resulted in a picture of descending production with tractor breakdown or repossession and the sale of livestock in order to pay debts. In order to generate additional cash, group members are often asked to put up further sums to repay AFC purchase loans, and in some cases new members are recruited to help make these payments. The end result of this pattern of deterioration has been that individual members lose interest in the large-scale activity and retreat to subsistence farming on their individual plots and to communal grazing of their individually-owned livestock; in these instances that part of the farm devoted to large-scale agriculture often is almost totally neglected.

Coffee Estates

2.10 There are a total of 85,000 hectares planted to coffee in Kenya; of these about 30,000 ha (35%) are in estates, many owned by groups or individual African farmers, and the remainder is cultivated by about 270,000 smallholders with an average coffee area of 0.2 ha each. In the past decade there has been an overall decrease in net planted area. This decline can be attributed to managerial problems and a lack of credit on estates transferred to Kenyan ownership (mainly group ownership as in the case of mixed farms) and to the rapid spread of Coffee Berry Disease (CBD). Smallholder production was particularly affected by CBD, as the reduced yields combined with lower coffee prices discouraged farmers from undertaking the relatively expensive spraying programs essential to control of the disease. Planting was also restricted prior to September 1973 under the terms of the International Coffee Agreement. Since then the Agreement has been extended on a discussion basis until 1975 but the export quotas and price guidelines are no longer in force. Government's new Development Plan calls for the expansion of output over several years mainly by further increases in yield levels. In view of Kenya's 2% share of the world market, any increase in export sales would not have an appreciable effect on international coffee sales.

2.11 Total coffee production in Kenya has risen substantially over the last two years, mainly due to a major improvement in yields closely linked to the control of CBD and to price improvements. Average yields were about 900 kg/ha in this period as compared with 700 kg/ha in previous years. The main improvement took place in the estate sector, where yields averaged about 1,300 kg/ha, about double the smallholder sector. Some of this improvement could also be accounted for by the development of minor irrigation systems, especially in the Thika district; rainfall in this area is only marginally sufficient for coffee production, but the bushes are less susceptible to CBD which requires humid conditions.

2.12 As in the case of the mixed farms, there are a substantial number of problem coffee estates (about 100), mainly owned by groups, which have suffered from severe management difficulties, a lack of working capital and dissension among owners. This has in turn led to an almost complete reduction in inputs such as labor for weeding, fertilizer and pesticides and as a result to drastically reduced yields; yields now are about 200 kg/ha, or about one-seventh of average. With necessary inputs and good management, these estates can be quickly rehabilitated and offer excellent prospects for the immediate expansion of coffee production.

Rehabilitation Programs

2.13 Various rehabilitation programs for both problem mixed farms and coffee estates have been instituted, and these have met with varying degrees of success. The organizations most closely involved with these efforts have been the Agricultural Finance Corporation (AFC), the German Agricultural Team (GAT), 1/ and the Ministry of Agriculture. The primary focus was the institution of improved management, and a wide range of approaches were attempted. Directed Agricultural Companies 2/ were tried, but as these involved compulsory management without the promise of any financial assistance, they were generally unsuccessful. Binding partnership agreements were also tried with a similar lack of success. As a temporary measure, AFC has employed farm managers and put them in charge of several selected problem farms. This program which includes some financial assistance has been reasonably successful thus far.

2.14 Some useful lessons have emerged from these initial rehabilitation efforts which will be taken into consideration by Government in the implementation of future programs. It first should be noted that there can be no

1/ The German Agricultural Team was a small team of extension officers working in Trans Nzoia District since 1966; the team was recruited under bilateral aid.

2/ Companies already established which were in financial difficulties and which were placed under the direction and control of a Government appointed officer.

blanket solutions and a wide range of remedies may be necessary to meet the needs of the individual farms. Also, the full support of all members is essential to success, and any binding agreement must be freely accepted by all members; however, rights, authority and duties must be clearly defined and adhered to. It is essential moreover that each member on a farm be assured sufficient land for a house and a subsistence plot (about 1 ha on high potential land). The key to success in such a rehabilitation program is the employment of a qualified farm manager with sufficient power on each participating farm. Constant attention by competent supervisory staff is also necessary, and each such supervisory or visiting manager should be responsible for a limited number of farms; support and close cooperation by all Government agencies concerned should also be assured. Finally, it should be noted that some farms ^{1/} will not be able to be rehabilitated simply by the infusion of credit and management. Other remedies such as direct grants, reorganization, etc. should be considered in these cases.

C. Agricultural Credit (Annex 2)

2.15 The Kenyan banking system consists of a Central Bank, seven commercial banks, the Agricultural Finance Corporation (AFC) and the Cooperative Bank. The Central Bank exercises little control over agricultural lending except by setting the prime interest rate. The Cooperative Bank is the main financial institution servicing the cooperative system, and offers the cooperative societies banking services designed to meet their special needs. The bulk of commercial bank lending to agriculture is to large-scale farming companies and to corporations engaged in agribusiness activities, although the major commercial banks have recently instituted several experimental small-scale lending schemes. Total direct commercial bank lending to agriculture in 1973 amounted to Ksh 356 million, or approximately 11% of total advances; interest rates vary from 9% to 11% payable on amounts outstanding.

2.16 AFC was established in 1963 to assist in the development of agriculture and agricultural industries, and it is now the main credit channel for small and medium-scale farmers. At present it extends credit under three large-scale schemes which cover land purchase and development loans under the British Land Transfer Program, ranching loans funded by IDA, Sweden and USAID (Credits 129-KE and 477-KE), and large farm development programs supported by Germany. AFC is also extending credit under two smallholder development projects supported by IDA (Credits 105-KE and 344-KE). In addition to those schemes supported by external donors, AFC operates its own small and large-scale lending schemes and acts as agent for the Guaranteed Minimum Return Program (which provides seasonal credit to growers with more than 15 ha under wheat and hybrid maize as well as insurance against crop failures). AFC

^{1/} This category is excluded from the Project.

financing is provided mainly by Government in the form of irredeemable or ownership capital part of which is interest-bearing, (originally belonging to its predecessor corporation, the Land and Agricultural Bank); the remainder is interest-free grants, and redeemable or long-term debt capital. Interest-bearing capital is lent by Government at interest rates ranging from 1% to 6% per annum. For fiscal year 1973, the blend of interest payable averaged 3.5% on total resources including interest free grants. Since 1969 AFC has made loans totalling US\$12.6 million, and has charged interest of 7.5% on land purchase loans and 8% on all others. AFC's standard rate for new loans was recently increased to 9%. Interest receivable in fiscal year 1973 averaged about 7% on the total portfolio, giving AFC a spread of 3.5%. This margin has generally proved insufficient to cover AFC's operating expenses, and the Corporation has operated at a loss since 1969; however, the unaudited figures for fiscal 1974 indicate a small profit of Ksh 3 million (US\$0.4 million). This profit is based on a change in method of calculating provision for doubtful debts; without this change there would be a loss of about Ksh 2 million (US\$0.3 million). It is expected that the recent increase in AFC's lending rate in addition to an expected improvement in the arrears situation will bring about a significant improvement in AFC's operating results. Overall AFC's level of efficiency is considered satisfactory.

2.17 East African Acceptances (EAA), Ltd, a financial institution owned by Standard Bank, Barclays Bank, Latham and Brooke Bond Liebig commenced operations in Kenya in 1969. The main shareholders accumulated a substantial amount of liquid funds in Kenya, and in order to provide an outlet for these funds, EAA set up a Management Division which provides working capital at commercial interest rates (currently about 10%) along with management expertise to coffee estates. This program has proved to be very successful; EAA by mid-1975 was managing 1,750 ha under coffee and plans to expand its activities in this field.

D. Agricultural Services (Annex 3)

2.18 The Ministry of Agriculture has major responsibility for the provision of agricultural services. Within the Ministry, the Land and Farm Management Division of the Agricultural Department provides farm management advice to the mixed farming sector, and also has responsibility for soil conservation and tractor hire services. There are generally a sufficient number of professional and technical staff available within this Division, but these lack experience in practical large-scale farming, and also suffer as a result of the frequent shifting of staff from one appointment or district to another. The Department of Veterinary Services has been actively involved in attempts to control the important diseases limiting cattle movement and production, as well as in various aspects of veterinary research and vaccine production.

2.19 The Ministry's Training Division serves as a liaison with the Faculty of Agriculture at the University of Nairobi and the diplomate level college at Egerton which produces diplomate graduates specializing in farm management. It also administers certificate level training at Embu and Bukura as well as farm manager training at Thompsons Falls and Eldoret Training Institutes. The latter two centers give a one-year course for training managers for farms and cooperatives. The Thompsons Falls Institute is lodged in temporary quarters which are now drastically in need of renovation. Substantial investment would be required in order to bring these facilities up to an acceptable standard, and Government has made an allocation in the 1975 estimates for these improvements. All trainees suffer to some extent from a lack of actual management experience; this is usually obtained by having them serve as assistant managers or trainees on commercial farms before assuming managerial responsibility elsewhere. The trainees have, however, experienced some difficulty in finding suitable jobs due largely to the inability of the new owners of the large farms to pay adequate salaries.

2.20 Government, acting through the Ministry of Agriculture, sets farm-gate prices for the major agricultural commodities including maize, wheat, coffee and milk. These prices are published annually, and it is important to the farmer that this be done sufficiently in advance of the planting season to allow him to determine his optimum cropping pattern. If prices are not published in a timely fashion, farmers tend to delay purchases of inputs and seed as well as planting with consequent reductions in both yields and acreage. The price of fertilizer is negotiated by Government with the major importing companies and is then published by the Ministry of Agriculture.

2.21 Farm products are marketed through commercial boards, national and local cooperatives and private traders. Several of the statutory boards have been given monopoly powers. Both the Wheat Board and the Maize and Produce Board have complete control over the movement of these grains from one district to another. The Coffee Board not only serves as the sole marketing agent but also provides farmers with inputs, credit and technical advice. The Kenya Cooperative Creameries (KCC) is the main marketing agent for milk and dairy products, and has a near monopoly on the sale of fluid milk in the major cities.

2.22 The farming areas are also served by District Agricultural Committees. These are chaired by the District Commissioner with members from the government technical staff and the local farming community. The committees provide, among other things, loan advice to AFC and administrative help with regard to land transfers (via local Land Boards), subdivision requests and problem farms.

III. THE PROJECT

A. General Description

3.01 The Project would over a five-year period aid in the redevelopment of about 90 group-owned farms and 36 group coffee estates which were transferred to Kenyan ownership during the land transfer program and which are now in need of credit and improved management services. Specifically, the Project would:

- (a) provide short, medium and long-term loans to 90 group large-scale mixed farms in Rift Valley Province, and 36 coffee estates in Central Province for on-farm investments in machinery and infrastructure and for working capital;
- (b) provide technical and management services to all participating farms;
- (c) create a large-scale farm management section within AFC to implement the rehabilitation program;
- (d) establish four units within the Land and Farm Management Division of the Ministry of Agriculture to help identify Project farms, assist in Project implementation and administer a training program for farm managers; and
- (e) provide for a study of the large-farm sector within Kenya, Project evaluation and future project preparation.

Overall direction of the Project would be carried out by a Project Steering Committee (para 4.01), while the Agricultural Finance Corporation (AFC) would have specific responsibility for Project implementation. Credit for all participating farms would be channelled through AFC except for any funds provided by EAA or other coffee management companies for some of the coffee estates.

B. Project Phasing and Development

3.02 The Project would be concentrated in three districts within the Rift Valley Province - Nakuru, Uasin Gishu (Eldoret) and Trans Nzoia (Kitale), as well as in Thika and Kiambu Districts within the Central Province (Map). Two types of farms would be included in the Project: mixed farms (producing wheat and maize along with livestock) in Rift Valley Province and coffee estates in Central Province. The participation of these farms would be phased over a four-year period in order to allow for the gradual build-up of Project services. The expected rate of participation is detailed below.

| <u>Year</u> | <u>Uasin Gishu District</u> | <u>Nakuru District</u> | <u>Trans Nzoia District</u> | <u>Total Mixed Farms</u> | <u>Coffee Estates</u> | <u>Cumulative Total</u> |
|-------------|-----------------------------|------------------------|-----------------------------|--------------------------|-----------------------|-------------------------|
| 1 | 7 | 4 | 3 | 14 | 9 | 26 |
| 2 | 10 | 6 | 6 | 22 | 9 | 34 |
| 3 | 15 | 7 | 7 | 29 | 9 | 42 |
| 4 | 13 | 6 | 6 | 25 | 9 | 38 |
| Totals | <u>45</u> | <u>23</u> | <u>22</u> | <u>90</u> | <u>36</u> | <u>126</u> |

3.03 Each of the farms included in the Project would require its own financial projections, farm policies and plans. However, farm models for both the mixed farms and the coffee estates have been drawn up to represent the typical farm or estate expected to be rehabilitated under the Project; each farm would differ somewhat from these models. All farms selected would be group-owned problem farms, with an existing or proposed organizational structure which ensured that all owners had legal rights, and that effective decisions could be made by the farm. As partnerships require all partners to fully concur with any decision for it to be legal they are particularly subject to difficulties in management. Assurances were obtained that all project farms would be either companies or cooperatives (where majority vote decides) and that all members would be legally registered. Only farms which could be expected to become financially viable under the project would be selected and for the mixed farms, the land/owner ratio would be such that each resident owner had a subsistence plot and should receive an income of not less than Ksh 400 per annum at maturity (year 11). The farms and estates are currently faced with an acute shortage of the working capital needed to meet operating costs and to make repayments on existing land purchase and redevelopment loans, as well as a need for development items such as machinery, livestock, etc. It will take several years to restore farms and estates to a profitable status, and in the interim they will need assistance with restructuring of existing debts. AFC has agreed to refinance the existing loans, including arrears, to allow repayment over an extended period. During negotiations assurances were obtained that, where necessary, loans for individual farms would be refinanced over periods up to 30 years. In addition to financial assistance virtually all farms require greatly improved management, and consequently it was necessary that the Project include provision for an adequately trained manager on each farm. A general outline of two farm types is given below, and additional details are available in Annex 4.

3.04 Mixed Farms. The mixed farm model represents a 600 ha problem farm (para 2.09) suitable for rehabilitation by the infusion of capital and management services. It is expected that with the improved inputs, infrastructure and management provided under the Project, the farm would produce grain from about 140 ha wheat and 40 ha maize along with production of milk from dairy cattle. The land in the Rift Valley where the mixed farms would be located is normally cropped on about a four-year crop to three-year grass rotation to maintain fertility.

3.05 The Land and Farm Management Division of the Ministry of Agriculture would identify possible Project farms and submit recommendations along with a preliminary management plan prepared in consultation with the group owners to District Rehabilitation Committees; the latter would in turn make recommendations to the Large Farm Management Section within AFC. AFC would review these recommendations and, if acceptable, would as necessary modify the individual farm development plans, cash flows and loan refinancing schedules (para 3.03). AFC would then prepare a five-year loan agreement for each farm in consultation with group owners whereby the group owners would agree to carry out an agreed development program and to employ a manager, acceptable to AFC on terms and conditions acceptable to AFC. The manager would be guided and supervised by AFC's Large Farm Management Section. The signing of such an agreement by the owners would be a prerequisite for participation in the Project.

3.06 Once the loan agreement had been signed, a resident manager would be appointed and a series of meetings would be held with the owners to ensure their understanding of and cooperation in the program. At this time, the purchase of inputs and equipment would also begin. During the five-year period of the loan agreement, members would receive wages at current rates on a per day basis for each day worked on large-scale activities as well as a modest cash bonus estimated at Ksh 20 to Ksh 100 per annum. The group owners would have an increasing participation in management decisions and at the end of the Project period would assume full responsibility for farm management. It is expected that they would retain the resident farm manager and continue the improved management policies introduced under the Project.

3.07 Coffee Estates. The model group owned coffee estate represents a presently run-down coffee estate of 50 ha coffee and 65 ha of grassland and owners plots. Yields of coffee on these estates are presently about 200 kg parchment per ha. On the basis of experience with estates which are now being rehabilitated under similar programs, it has been estimated that as a result of improvements under the Project yields would increase over three years to about 2,000 kg parchment per ha. These greatly increased yields and the higher profitability of coffee estates as compared to mixed farms would enable coffee estates to pay for better qualified individual estate managers out of income and would also enable payment of a higher cash bonus to owners than would be the case for the mixed farms. A relatively high working capital component (both in amount and as a percentage of total finance) would be required for the coffee estates due to the high level of inputs such as fertilizers and sprays.

3.08 The coffee estates that are likely to be suitable for rehabilitation under the Project would be initially selected by a District Rehabilitation Committee and AFC. The owners would then negotiate a management agreement satisfactory to AFC with a management company under which all financial, managerial and estate policy decisions would be made by the management company after consultation with the owners and with AFC. It is expected that EAA and other companies would take over management of about 27 of the 36 estates; they would provide overall management services, including resident

managers, and possibly working capital. They would also provide various servicing functions whereby tractors, equipment and irrigation units would be repaired or replaced and inputs of fertilizer and chemicals provided. They would charge their normal management fee (presently for EAA Ksh 1,000/ha of coffee), a crop marketing fee (normally 1.5% of the gross value of the crop), and would charge commercial interest rates, presently about 10%, on any working capital advances. As the management companies were not able to give an assurance to provide working capital, Government has undertaken to provide all the incremental working capital (estimated at about US\$4.5 million) for these 27 estates but anticipates that at least some of these funds would be provided by the management companies. Provision has been made under the loan/credit for AFC to provide the incremental working capital for the other 9 estates subject to the signing of an acceptable management agreement between each estate and a management company or individual satisfactory to AFC.

C. Detailed Features

On-Farm Investments

3.09 Under the Project three types of credit would be provided to facilitate on-farm investments for all participating farms. First, long-term credit would be provided for the purchase of fencing, dairy reconstruction, piping, storage tanks, equipment and livestock etc., as well as for coffee factories and other buildings and irrigation on the coffee estates; these loans would be repayable in equal installments of interest and principal over 15 years at 9% p.a. (AFC's standard interest rate) with a two-year grace period in the case of mixed farms. Second, medium-term credit repayable in equal installments of interest and principal over seven years at 9% p.a. with a two year grace period would be provided for the purchase of tractors, cultivation equipment, machinery, vehicles and minor irrigation equipment (Annex 4, Tables 2 and 10). Third, working capital would be provided by AFC and by Government (for coffee estates working capital) or by EAA and other management companies at commercial rates (presently about 10% p.a.) for the purchase of farm inputs, insecticides, herbicides, fertilizer, seeds and labor costs.

AFC Large Farm Management Section

3.10 Under the Project a management section would be established within AFC under the direction of the Project Manager (para 4.03). Staff to be recruited would include a Deputy Project Manager, an accountant, four internationally recruited Senior Farm Managers, two local trainee managers and support staff.

3.11 Training. Funds for a resident farm manager training program would be provided by Government with the Land and Farm Management Division of the Ministry of Agriculture having overall responsibility for coordination of the training program. Prospective managers would be mainly recruited from graduates of the Eldoret and Thompson Falls Farm Managers Training Institutes

(para 2.19). In order to ensure an adequate number of recruits for the program, assurances were obtained at negotiations that the Thompson Falls Training Institute would be renovated to an acceptable standard. As part of the training program, the proposed resident managers would be placed as Assistant Trainee Managers on suitable commercial mixed farms for one year in order to give them some practical experience. They would also be enrolled in short courses in management techniques, bookkeeping, labor management, etc. at Egerton Agricultural College as and when suitable short courses could be made available by the college. It is considered that there are sufficient suitable managers available for training.

Ministry of Agriculture - Land and Farm Management Division

3.12 Four small teams for the different areas would be established within the Ministry of Agriculture's Land and Farm Management Division to assist in the selection of the mixed farms to be included in the Project. The activities of these teams would be coordinated by a Project Coordinator within the Ministry. A Regional Land and Farm Management Officer (Rehabilitation) would help oversee the activities of the teams and would organize the resident farm managers training program (para. 3.11).

Large Farm Sector Study

3.13 The Project would involve only 126 out of some 700 problem farms within the large farm sub-sector. By necessity, those farms which present the most difficult problems would not be included, i.e., those which by reason of the large number of owners or extensive unofficial subdivision would be almost impossible to rehabilitate solely by provision of credit and management assistance. The Project would provide for a study, by consultants whose qualifications, experience, and terms and conditions of employment would be satisfactory to the Association, to review the large-scale farm sub-sector and to investigate possible solutions to the difficulties presented by problem farms. The study, which would commence by January 1, 1976, would recommend policies for related problems within the large-scale farming sector; areas of investigation would include farm ownership systems, the legal status of individual group owners, and the ratio of owners to farm size. Finally, the study would evaluate the early progress of the Project with the aim of formulating a possible second-stage project covering an additional 350 farms. Draft terms of reference are given in Annex 4.

Environmental Effects

3.14 The Project would have no appreciable effect on the ecology of the Project area as the rehabilitation effort would be carried out on already existing farms. The crop rotations to be introduced would help conserve the agricultural potential of the soil and the amounts of pesticides and other chemicals employed would be modest. Project coffee production would be processed in factories already in existence.

D. Project Costs (Annex 5)

3.15 Total Project cost is estimated at Ksh 166 million (US\$23.2 million), of which Ksh 69 million (US\$10.1 million) or 44% represents foreign exchange requirements. The estimated costs are summarized below:

| | -----Ksh'000----- | | | -----US\$'000----- | | | Foreign |
|---|-------------------|----------------|----------------|--------------------|----------------|---------------|---------------------------|
| | <u>Local</u> | <u>Foreign</u> | <u>Total</u> | <u>Local</u> | <u>Foreign</u> | | <u>Exchan</u> <u>%</u> |
| A. On Farm Investments | | | | | | | |
| 1. Mixed Farms | | | | | | | |
| Machinery and Equipment | 2,200 | 16,115 | 18,315 | 308 | 2,258 | 2,566 | 88 |
| Buildings | 685 | 170 | 855 | 96 | 24 | 120 | 20 |
| Fencing, piping and land clearing | 734 | 1,146 | 1,980 | 116 | 161 | 277 | 58 |
| Livestock | 14,040 | - | 14,040 | 1,966 | - | 1,966 | - |
| Incremental working capital | <u>6,622</u> | <u>6,622</u> | <u>13,244</u> | <u>928</u> | <u>927</u> | <u>1,855</u> | <u>50</u> |
| Sub-total | 24,381 | 24,053 | 48,434 | 3,414 | 3,370 | 6,784 | 50 |
| 2. Coffee Estates | | | | | | | |
| Machinery and Equipment | 2,240 | 7,500 | 9,740 | 314 | 1,050 | 1,364 | 77 |
| Buildings | 2,280 | 1,340 | 3,620 | 319 | 188 | 507 | 37 |
| Incremental working capital | <u>20,442</u> | <u>7,874</u> | <u>28,316</u> | <u>2,863</u> | <u>1,103</u> | <u>3,966</u> | <u>28</u> |
| Sub-total | <u>24,962</u> | <u>16,714</u> | <u>41,676</u> | <u>3,496</u> | <u>2,341</u> | <u>5,837</u> | <u>40</u> |
| Total (A) | 49,343 | 40,767 | 90,110 | 6,910 | 5,711 | 12,621 | 45 |
| B. Project Administration & Technical Services | | | | | | | |
| 1. A.F.C. | | | | | | | |
| Headquarters | 5,241 | 3,119 | 8,360 | 734 | 437 | 1,171 | 37 |
| 2. Ministry of Agriculture | | | | | | | |
| Resident Managers | 1,671 | 139 | 1,810 | 234 | 20 | 254 | 8 |
| Training | 1,165 | - | 1,165 | 160 | - | 160 | - |
| 3. Large Farm Sector | | | | | | | |
| Study and Project Evaluation | <u>126</u> | <u>515</u> | <u>641</u> | <u>18</u> | <u>72</u> | <u>90</u> | <u>80</u> |
| Total (B) | <u>8,203</u> | <u>3,773</u> | <u>11,976</u> | <u>1,146</u> | <u>529</u> | <u>1,675</u> | <u>31</u> |
| Total Base Cost (A+B) | <u>57,546</u> | <u>44,540</u> | <u>102,086</u> | <u>8,056</u> | <u>6,240</u> | <u>14,296</u> | <u>44</u> |
| Physical contingency | <u>5,760</u> | <u>4,450</u> | <u>10,210</u> | <u>806</u> | <u>624</u> | <u>1,430</u> | <u>44</u> |
| Sub-total | 63,306 | 48,990 | 112,296 | 8,862 | 6,864 | 15,726 | 44 |
| Price contingency | <u>30,124</u> | <u>23,370</u> | <u>53,494</u> | <u>4,223</u> | <u>3,271</u> | <u>7,494</u> | <u>44</u> |
| Total Project Cost | 93,430 | 72,360 | 165,790 | 13,085 | 10,135 | 23,220 | 44 |

Costs have been estimated at prices prevailing at the time of appraisal plus estimated price escalation to the beginning of 1975. In addition, a physical contingency of 10% and a price contingency of 12% per annum have been added to all Project costs. Price contingencies are based on the estimated level of price increases for Project items in Kenya. Taxes and duties on Project items are negligible and have been included.

E. Financing (Annex 6)

3.16 The financing of Project costs would be shared in the following amounts and proportions:

| | <u>US\$ Million</u> | <u>%</u> |
|--|---------------------|------------|
| Bank | 7.5 | 65 |
| IDA | 7.5 | |
| Government | 3.7 | 16 |
| Government, EAA or other Coffee Management Companies | <u>4.5</u> | <u>19</u> |
| Total | <u>23.2</u> | <u>100</u> |

The proposed Bank loan of US\$7.5 million would be for 25 years including 5 years of grace while the proposed IDA credit of US\$7.5 million would be on standard terms to Government. This would cover the equivalent of the foreign exchange component (US\$10.1 million) and about 37% of local costs or about 65% of total Project costs. Bank and IDA funds together with Government's contribution for on-farm investments and the costs of AFC's Project Headquarters would be onlent to AFC at 3% per annum for a term of 30 years including a three-year grace period on capital repayments, which should allow AFC sufficient time to strengthen its financial structure (para 2.16). The interest rate is the same as that for recent Government onlending to AFC and reflects the high management costs (about 3% p.a.) to be incurred by AFC in providing additional services that Government is not as well equipped to provide. This onlending rate to AFC would cover interest payments by Government to Bank/IDA in relation to funds onlent to AFC. AFC would in turn onlend these funds to farms at its recent increased standard rate of 9% per annum (slightly below commercial rates in Kenya). Assurances as to these arrangements were obtained at negotiations. Bank/IDA and Government funds in the ratio of 4:1 would finance all on-farm investments financed with medium- and long-term credit, all the incremental working capital for the mixed farms and for 9 of the 36 coffee estates. Amounts required to cover the costs of Project administration and technical services including the large farm sector study would be charged in the same ratio, while the large farm sector study would be financed 90% by Bank/IDA. The working capital requirements (about US\$4.5 million) for 27 of the 36 estates would be the responsibility of Government although it anticipates that the management companies would provide at least part of these funds at commercial interest rates.

F. Procurement

3.17 The items to be financed would be required at scattered locations and at varying times throughout the Project period, and would not be suitable for bulking of orders for procurement by means of international competitive bidding. Procurement would therefore be through normal commercial channels. There is adequate competition, both international and national, in offering goods and construction contracts through the normal channels available to all consumers in the country. Several producers of farm machinery and fertilizers are represented in Kenya; sales and after-sales service are adequate, supplies satisfactory and prices competitive.

G. Disbursement (Annex 7)

3.18 Funds from the Credit/Loan account would be disbursed on the following basis:

- (a) 80% of medium- and long-term sub-loans made by AFC under the Project;
- (b) 80% of incremental working capital advanced by AFC for Project farms and for about nine coffee estates;
- (c) 80% of expenditure for AFC's Project headquarters;
- (d) 80% of expenditures for training resident farm managers;
- (e) 80% of expenditures for Project staff within the Ministry of Agriculture; and
- (f) 90% total costs for the large farm sector study and Project evaluation.

Disbursements against (a), (b), (c), (d) and (e) would be made against certificates of expenditures, the documentation for which would not be submitted for review but would be retained by the borrower and made available for inspection by IDA during the course of Project supervision missions. Any funds remaining in the Credit account upon completion of the Project would be used at the Association's direction for the continuing development of mixed farms and coffee estates.

H. Accounts and Audit

3.19 Due to problems with accounting machines, AFC has for several years been experiencing delays in the preparation of accounts and production of timely statements for billing purposes. With the installation of a new computer, it is expected that all accounts will be on the computer by the end of 1974. The small-scale loans have already been programmed, and after a few initial problems, it is now possible to obtain an up-to-date aging schedule of arrears on small-scale loans. AFC's preparation of loan statements and the regular monthly billing system which will thus come into effect are expected to result in up-to-date accounts and statements for effective management information. The accounts are presently audited by the Nairobi Office of Messrs. Coopers and Lybrand. Assurances were obtained during negotiations that AFC would continue to employ independent auditors acceptable to IDA and that the audited accounts, together with the auditor's report, would be sent to IDA within four months of the end of AFC's fiscal year. AFC has had some difficulty in complying with this requirement under previous projects, and there have been in many cases substantial delays in the presentation of accounts. Once the new system is fully operational the situation is expected to be greatly improved, however, and AFC should be fully capable of administering the Project under the required procedures.

IV. ORGANIZATION AND MANAGEMENT

4.01 Overall direction of the Project would be exercised by a steering committee consisting of the Head of the Land and Farm Management Department of the Ministry of Agriculture (Chairman), a representative of the Ministry of Finance, the General Manager of the Agricultural Finance Corporation (AFC), the Project Manager (AFC) and the Project Coordinator (Ministry of Agriculture); AFC would, however, have specific responsibility for Project implementation (Chart). The Ministry of Agriculture would aid in the preliminary selection of the mixed farms to be included under the Project, and would provide training and agricultural extension services to these farms. Initial selection of the coffee estates would be made jointly by AFC and District Rehabilitation Committees. East African Acceptances (EAA) or other management companies or individuals would provide management services to the coffee estates.

Mixed Farms

4.02 The Land and Farm Management Division of the Ministry of Agriculture would establish four small teams for different areas along with supporting staff in Rift Valley Province under the overall direction of a Project Coordinating Officer assisted by a Regional Land and Farm Management Officer (Rehabilitation). Each team would be headed by an experienced Agricultural Officer aided by an Assistant Agricultural Officer and an agricultural assistant. The teams would review prospective borrowers, and would, in conjunction with the group owners, prepare initial farm plans, development proposals and budgets.

These findings would be reported to District Rehabilitation Committees to be established and which would consist of the District Commissioner (Chairman), AFC's Branch Manager, District Agricultural Officer, District Land and Farm Management Officer, District Cooperative Officer and two members selected for their knowledge of the District. They would make a preliminary selection of the farms to be included and then forward their recommendations to AFC. The District Rehabilitation Committees would also be responsible for ensuring that all members of each Project farm were legally registered (para 3.03).

4.03 AFC proposes to establish a Large Farm Management Section with over-all responsibility for Project implementation and management. The section would be headed by the Project Manager and additional staff would include a Deputy Project Manager, four senior experienced large farm Visiting Managers, two trainee managers, an accountant, a systems consultant and support staff. Project staff are detailed in Annex 5, Table 2. The success of the Project would be largely dependent on the Management Section senior staff who would need extensive experience with large scale farming; the Project Manager and four senior visiting managers would therefore be internationally recruited (suitable personnel may already be residing in Kenya). The appointment of a Project Manager with qualifications and experience acceptable to IDA would be a condition of the Loan/Credit effectiveness. The Management Section - with advice from AFC loan officers - would make the final selection of Project farms. It would also be responsible for the approval and supervision of individual farm managers, and for ensuring that the development plan (as amended by AFC) for each farm is implemented and the necessary farm records and budgets prepared. Although AFC would have direct responsibility for the rehabilitation program, the Ministry of Agriculture would provide general extension services to the large farms. The existing services in this area are generally satisfactory, particularly in the fields of animal health and plant breeding.

4.04 Following the final selection of a farm by AFC, a loan agreement would be finalized with the group owners and signed between AFC and each farm; the group owners would agree to implement an approved development plan subject to any modifications approved by AFC, to establish a Farm Committee (comprising AFC, a Land and Farm Management Officer of the Ministry of Agriculture and two representatives of the owners) which would be responsible for farm decisions, to employ for 5 years a manager satisfactory to and on terms approved by AFC; such manager to be guided and supervised by senior Visiting Managers within the Large Farm Management Section of AFC. Individual farm owners would, in most cases, be employed on their farm at current wage rates; they would also be given exclusive use of a subsistence plot of about 1 ha and would receive variable cash payments in each year (para 3.06). The owners would be kept well informed on progress of the farm, would be consulted on all major decisions and play an increasing role in the management of the farm over the five year period. Visiting as well as the farm managers would train group owners so that at the end of that time take over full responsibility for their farms. Successful rehabilitation of the farms and training of the farm owners will be the major factors in ensuring future good management.

4.05 Training. In view of the importance of the individual farm managers to the success of each farm, it is vital that they have adequate experience and training. Under the Project, it is expected that the first 20 farm managers would be recruited and placed directly on farms; there are an adequate number of trained farm managers presently available for this purpose. Subsequently, farm managers would be recruited about a year ahead of their utilization (para 3.11) and would be placed for a year on a successful large-scale farm for training. These farms would be mainly outside the Project, but eventually training would also be carried out on some Project farms. During this first year, the trainee farm managers would receive a lower salary, and a small training fee would be paid to the farm manager who supervised their work. The selection of farm managers and the arrangements for training would be the responsibility of the Regional Land and Farm Management Officer based at Nakuru (para 3.12), acting in consultation with AFC. AFC would have the right to reject any farm manager whom they considered unsatisfactory. Assurances were obtained at negotiations that Government would agree to establish and maintain this farm manager training program.

Coffee Estates

4.06 Coffee estates to be rehabilitated under the Project would be selected in a similar manner as the mixed farms, with District Rehabilitation Committees making preliminary recommendations to AFC. Under agreements to be negotiated with Government prior to credit effectiveness, EAA or other coffee management companies, acceptable to IDA, would agree to provide management, accounting and other special services to about 27 of the 36 coffee estates. The owners of each individual estate would in conjunction with the management company and AFC agree to a development plan. AFC would provide the medium- and long-term development credit requirements for each estate and would give final approval of the development plan. The working capital requirements would be provided either by Government or the management company (para 3.16). Once this development had been approved each estate would sign a five-year management agreement with a management company which would also be submitted for AFC approval. Draft general agreements would be reviewed by IDA. AFC would provide short-term working capital for the remaining nine estates in addition to the long- and medium-term credit requirements. Management of these estates would, however, be delegated to designated management companies or to visiting agents, a number of which are already operating within the coffee industry. Management staff for the coffee estates have been included in the annual operating costs of each estate, as these estates would be operated as strictly commercial enterprises. Signing of an agreement, acceptable to IDA, between Government and one or more management companies would be a condition of effectiveness.

V. PRODUCTION, MARKETING AND FINANCIAL BENEFITS

Production

5.01 Increased production as a result of the Project would be attributable both to more than doubling of crop area of the mixed farms, and an increase in crop yields due to expanded use of fertilizer, insecticides and improved farm management techniques. The average yields on unimproved farm as well as yields expected to be achieved under the Project are given below; allowance has been made in the calculation of average yields for the occasional partial crop failure due to rainfall variations.

| | Wheat (bag/ha) /1 | Maize (bag/ha) /1 | Milk (kg/annum) /2 | Coffee (kg/ha) /3 |
|---------------------|----------------------|----------------------|-----------------------|----------------------|
| Before Development | 15 | 23 | 750 | 200 |
| At Full Development | 20 | 37 | 1,500 | 2,000 |

/1 1 bag = 90 kg of wheat or shelled maize.

/2 Per cow per annum.

/3 Clean parchment arabica coffee.

The estimated maize, wheat and coffee yields assume timely and proper cultivation, improved seed, mechanization and proper fertilization; any delay in planting or in provision of inputs would consequently have an adverse effect on these yields. Assurances were obtained at negotiations that Government, which sets prices for imported fertilizers and bags, would negotiate these prices with import suppliers sufficiently in advance of the planting season so as to ensure the timely supply of these inputs. While coffee yields are presently very low, experience with similar estates has shown that yields can be rapidly increased to normal yields of 2,000-3,000 kg/ha on well-run estates. Milk yields are based on performance in commercial herds grazing established leys supplemented with fodder and a modest level of concentrate feeding. Herd performance in breeding intervals, calf rearing, and mortality are similarly based on commercial herd experience in the mixed farming areas.

5.02 At full development the annual incremental marketed production from the 90 mixed farms and 36 coffee estates would be 16,500 tons of wheat, 7,500 tons of maize, 3,300 tons of coffee and 17,500 tons of milk. The total gross value of this production would be Ksh 72.9 (US\$10.1 million); the majority of this increased value would be attributable to coffee (Ksh 32.0 million), milk and surplus livestock (Ksh 16.9 million), wheat (Ksh 19.7 million) and maize (Ksh 4.3 million). In addition livestock numbers would increase from 145,000 head of mainly unproductive mixed cattle to 200,000 head of dairy cattle.

5.03 Production and marketing of main Project crops are controlled by statutory boards, which also set producer and consumer prices and regulate the level of exports and imports. In order to allow farmers sufficient

opportunity to determine which crops they wish to plant, assurances were received from Government that the prices of major farm crops would be published by the end of December each year for the following year's cropping season and these prices would be reviewed annually and adjusted as necessary to reflect rising input costs and changes in international prices. Such a system would help maintain a level of agricultural profitability that would ensure the continued cultivation of these crops.

Markets and Prices (Annex 8)

5.04 Wheat. Production of wheat in Kenya has declined sharply over the past five years as a result of reductions in the area under cultivation; the net planted area declined from 172,000 ha in 1968 to 87,000 ha in 1973, and is expected to be only about 74,000 ha in 1974. Domestic consumption significantly expanded over this same period, however, and consequently large quantities of wheat had to be imported. These imports totalled about 77,000 tons in 1973, at a total foreign exchange cost of about Ksh 72 million (US\$10 million). Before 1973, Kenya wheat prices generally approximated import parity levels. Since then, however, international wheat prices have increased substantially and the 1974 average price is expected to reach about Ksh 135 per 90 kg bag. ^{1/} For Kenya this would mean a price of about Ksh 150/bag, delivered Nairobi. The 1973 producer price was Ksh 70/bag (recently increased to Ksh 100/-) and with the expected yields, Kenya wheat should compete favorably with wheat from major exporting countries. Recent forecasts indicate that international prices of wheat, ^{1/} expressed in 1974 constant terms, will decline steadily to reach Ksh 77 per bag by 1980.

5.05 Maize. Maize is Kenya's staple food and the country's most important crop in terms of both total planted area and total production. Marketed maize production (about 30% of total output) increased from 373,000 tons in 1972 to 450,000 tons in 1973. This 1973 record crop was due mainly to exceptionally favorable weather and to the increasing use of improved maize and hybrid varieties. As a result of dry weather conditions, higher fertilizer prices and delays in farmer credits, total marketed production is expected to decline by about 36% in 1974 to a level of about 288,000 tons. In view of the relatively large stocks on hand, however, there should be sufficient maize to meet projected domestic consumption in 1974. The current Development Plan places a major emphasis on increasing total maize production in order to satisfy a domestic demand for marketed maize which is expected to increase by about 4% per annum; these increases can be achieved most easily on large farms such as those to be rehabilitated under the Project. The 1973 farmgate price for maize in Kenya of Ksh 40 per 90 kg bag was recently increased to Ksh 60. The 1973 Maize Board in store price was about Ksh 44/bag. The international price of maize ^{2/} is expected to average about Ksh 77/bag in 1974 and then decline in real terms to Ksh 58/bag (in constant 1974 prices)

^{1/} Canadian Western Red Spring 14%, in store Thunder Bay.

^{2/} U.S. No. 2 yellow, f.o.b. Gulf Ports.

by 1980. In view of the current maize production costs and the relatively high transport costs, prospects for Kenya maize exports, except to adjoining countries, are limited.

5.06 Milk. Total annual marketed milk production has grown at a rate of 8% per annum over the past four years to a level of 290 million kg in 1973. The Kenya Cooperative Creameries (KCC) is the main marketing agent for milk and dairy products, and has a near monopoly on the sale of fluid milk in major cities. Producer and consumer prices are controlled by Government, and the producer price for fluid milk recently increased from Ksh 0.745/liter to 0.800 liter. Milk production in Kenya already exceeds domestic requirements, but demand from neighboring countries such as Tanzania and Uganda is expected to continue to expand, thus ensuring an adequate market for Kenyan production. In 1973, Kenya exported fresh milk to Tanzania and Uganda at an average price of about Ksh 1.0 per liter (on rail Nairobi). In spite of an increase in consumer prices for milk and dairy products in 1971, KCC's operating margin has been narrow, and the company has operated at a loss for the past two years. KCC's financial position is therefore difficult, and Government is currently reviewing consumer prices for milk and dairy products.

5.07 Coffee. The Kenya Producers' Cooperative Union (KPCU) is responsible for the collection, milling and classification of coffee as well as for delivery of the clean product to warehouses maintained by the Kenya Coffee Board. KPCU handles about 95% of the coffee produced within the country, with the balance going to small private mills. The volume of sales by the Coffee Board in 1972/73 totalled 72,600 tons, a 20% increase over the preceding two years. It is expected that the international price of coffee (Guatemalan spot New York) will average Ksh 11.3/kg in 1974. The average producer price in Kenya (f.o.b. Mombasa) was Ksh 9.2/kg in 1972/73, and a price of Ksh 10.8/kg is expected for the 1973/74 season. World coffee prices (expressed in 1974 constant terms) are expected to peak in 1976 at Ksh 12.6/kg, and to decline gradually thereafter to Ksh 10.2/kg by 1979. Producer prices in Kenya are expected to follow a similar trend.

Benefit to Farmers

5.08 The Project would provide for a substantial increase in the net incomes of group owners on 90 mixed farms and 36 coffee estates, thus directly benefitting about 12,600 farm families. It is estimated (Annex 4, Table 12) that over twenty years the financial return on incremental investments under the average Project mixed farm and coffee estate would be 24% and 30%, respectively. The returns, particularly for the coffee estate, are relatively high. This is mainly due to the significant amount of sunk costs, e.g., clearing, fencing, buildings, already committed and comparatively modest development expenditures are required. The main emphasis would be on restoring and improving production on previously existing operations. The returns would thus be both quickly achieved and substantial. Under the Project farmers would receive, in addition to subsistence valued at Ksh 500, an estimated cash income of Ksh 600 by year 10 on the mixed farms and Ksh 3,000 on the coffee estates.

Government Cash Flow

5.09 A Government cash flow related to the Project is at Annex 9. Government revenues arise principally from interest on Government's contribution to AFC and taxes on coffee estates (beginning in year 7). Government outflows over the same period would comprise funds to AFC for on-farm investments as well as expenditures for Project administration and technical services. Net Government outflows over the Project period would be recovered by year 10. Over the twenty year Project period the cumulative net surplus to Government is estimated at US\$10.0 million. The estimated cash flow has been based on coffee management companies providing working capital for 27 of the coffee estates (para 3.11). Should Government have to provide these funds it would need to contribute an estimated US\$4.5 million. These additional funds would, however, be fully repaid by year 10 and Government would receive a satisfactory interest rate.

VI. ECONOMIC BENEFITS AND JUSTIFICATION

6.01 The Project would rehabilitate 90 mixed farms and 36 coffee estates within the large farm sector, thus safeguarding the investments of a large number of group owners. Such a program would, through the infusion of additional capital and management expertise, ensure the economic viability of these operations and would result in a substantial increase in marketed agricultural production. The group owners would obtain security of ownership on both their individual subsistence plots and on that part of the farm devoted to large scale commercial cultivation, and ownership of land is particularly important to the traditionally minded rural population of Kenya. The maintenance of these commercial farming activities would also guarantee the owners an increasing cash income. Additional benefits to be derived would be the strengthening of AFC, and the valuable management experience which could be applied to the rehabilitation of other large problem farms within Kenya.

6.02 The major quantifiable benefits stemming from the Project would be a substantial increase in marketed agricultural production of wheat, maize, milk, and coffee; this would make a major contribution toward self-sufficiency in food production and would also provide substantial export revenues. At full development (year 6), the annual gross incremental marketed production resulting from the Project would be 16,500 tons of wheat, 7,500 tons of maize, 3,300 tons of coffee, and 17,500 tons of milk; together these would have a gross farmgate value of Ksh 73 million (US\$10.1 million). These increases would represent a 5% increase in Kenya's present total production of both wheat and coffee, and increases of 2% and 7% respectively for maize and milk.

6.03 This incremental production would result in substantial net foreign exchange earnings and savings estimated at US\$5.2 million per annum. The majority of these would be derived from exports of coffee which would be valued at US\$4.5 million gross annually. Incremental wheat production valued

at US\$2.8 million would be used to help offset wheat imports (in 1973 about US\$10 million), and would result in net foreign exchange savings of US\$2.0 million per annum. At full development, revenues from incremental milk production produced by the Project would reach about Ksh 15.7 million (US\$2.2 million). Maize produced under the Project would alleviate constraints on the availability of sufficient foodcrops on the domestic market. Maize is the staple foodcrop within Kenya, and the incremental production would help contain the shift to more expensive foodcrops such as wheat made necessary by recent shortages.

Economic Rate of Return and Sensitivity Analysis (Annex 10)

6.04 A significant feature of the Project is the relatively low level of investments needed to obtain the indicated benefits. Large amounts of sunk investments have already been made on the farms to be rehabilitated, and these investments cannot be capitalized upon due to the severe shortage of working capital and management expertise. The low incremental costs are reflected in the high rates of return obtained in the various components of the Project. The overall economic rate of return over twenty years is estimated at 42%. The individual rates of return for the coffee estates and the mixed farm are 54% and 29% respectively. Farmgate prices, adjusted to reflect international market conditions, were used. Foreign exchange costs and benefits were shadow priced at Ksh 10 per US\$1.00 (the official rate is Ksh 7.14 per US\$1.00) in order to reflect more accurately the value of foreign exchange to Kenya. In view of the substantial underemployment in the mixed farm areas, unskilled farm labor primarily that of the group owners was valued at 50% of the market wage rate. Apart from taxes on fuel which were excluded other taxes and subsidies on inputs would be very small and were included. Without shadow pricing of labor and foreign exchange, the rates of return on the coffee and the mixed farm components would be 33% and 21% respectively, thus yielding an overall Project rate of return of 29%. On the coffee estates, labor requirement are mainly for picking and during this period experienced labor in the area is in demand; labor has not therefore been shadow priced.

6.05 The major risk facing the Project would be the inability of the farms to attract and hold qualified farm managers. These farms are presently characterized by poor management and dissension between owners, as well as by a heavy debt burden (para 2.09). The repayment of the loans to farmers extended under the Project would, therefore, depend to a large extent on the implementation of the improved management practices which are essential to the rehabilitation of the Project farms. In spite of every effort a number of the farms are likely to continue to experience severe difficulties, and several of these farms may not survive. The substantial benefits to be gained from the rehabilitation effort greatly outweigh the risks involved, however, and Project risks can be minimized to a large extent by the careful selection of participating farms and by strict supervision of farm management. Risks associated with management are extremely difficult to quantify, and for this reason have not been included in the sensitivity analysis. The major quantifiable risk facing the Project would be an increase in the costs of inputs without a corresponding increase in farmgate prices.

6.06 The Project would be particularly sensitive to changes in certain parameters, and the influence of these on the internal rate of return has been calculated in Annex 10, Table 3. A 10% increase in the cost of inputs for the mixed farms would reduce the return from 29% to 20%, while a 10% reduction in production would reduce the return to 19%; a 10% increase in revenues would increase the rate of return to 40%. Returns from coffee estates would not be as sensitive to changes in costs or benefits: a reduction in benefits of 20% would reduce the return from 54% to 33%, while an increase in costs of 10% would reduce the return to 45%.

Employment and Income Effects

6.07 The Project would ensure employment, either permanent or seasonal depending on the number of group owners involved, for about 12,600 group farm owners within the large-farm sector; the Project would thus affect a total population of about 80,000 persons. The annual income of most of these families including the value of subsistence production is now estimated at about Ksh 600-1,000 or about Ksh 100-160 per person compared to a per capita agricultural income in Kenya of about Ksh 480 (para 2.01) and per capita GNP of Ksh 1,060. These families are therefore from the lower income levels of Kenya's population and many of them would become landless and unemployed if some means was not found to protect them. At full development (year 11) each family would receive, in addition to subsistence valued at Ksh 500, an annual cash income of Ksh 600 on the mixed farms and of Ksh 3,000 on the coffee estates; this would make the average per capita incomes about Ksh 200 and Ksh 600 respectively.

VII. RECOMMENDATIONS

7.01 During negotiations agreement was reached with Government on the following principal points:

- (a) where necessary, loans for individual farms would be refinanced for periods up to thirty years (para 3.03);
- (b) all farms and estates participating in the Project would be group-owned problem farms which could be expected to become viable under the Project (para 3.03);
- (c) all participating farms would be held in either company or cooperative ownership and all members would have legal registered status (para 3.03);
- (d) the onlending terms set forth in para 3.16 would be adhered to;
- (e) AFC would continue to employ independent auditors acceptable to IDA and that its audited accounts, together with the auditor's report, would be forwarded to IDA within four months of the end of AFC's fiscal year (para 3.19);

- (f) Government would agree to establish and maintain a training program for group farm managers (para 4.05);
- (g) Government would negotiate with import suppliers in order to set prices for fertilizer and bags sufficiently in advance of the planting season so as to ensure the timely supply of these inputs (para 5.01); and
- (h) the prices of major farm crops would be published by the end of December each year for the following year's cropping season and that these prices would be reviewed annually and adjusted as necessary to reflect rising input costs (para 5.03).

7.02 Conditions of Loan/Credit effectiveness would be:

- (a) appointment of a Project Manager with qualifications and experience acceptable to IDA (para 4.03); and
- (b) signing of an agreement, or agreements acceptable to IDA, between Government and one or more coffee management companies confirming the latter's commitment to provide management, accounting and other services and possibly working capital for about 27 coffee estates (para 4.06).

7.03 The proposed Project would be suitable for an IDA credit of US\$7.5 million on the usual terms and a Bank loan of US\$7.5 million with a 25-year maturity and a grace period of five years. The borrower would be the Government of Kenya.

February 10, 1975

KENYA

GROUP FARMS REHABILITATION

Agricultural Background

The Ecological Potential

1. Kenya is a country of enormous contrasts in topography, climate and soils. Within the country's 575,000 km² of land and 8,000 km² of open water, conditions range from a limited Afro-Alpine zone in the South to the tropical coastal strip, and from near desert in the North to high rainfall forest in the southwestern highlands. A land classification based on six broad ecological zones was devised in 1966, and these zones are described below:

Zone I. This extends to some 800 km² at high altitude above the tree line. Vegetation is moorland or grassland. Land use is limited to water catchment and tourism.

Zone II. This covers about 53,000 km² and embraces the bulk of Kenya's indigenous and planted forests. The agricultural potential of these areas is high. Tea, coffee and pyrethrum are important cash crops at higher altitudes, and at lower elevations cotton yields are generally good. Livestock can be kept intensively on leys with carrying capacity up to one stock unit per 0.5 ha. Well-managed natural grassland will support one stock unit per 1.0 to 1.5 ha.

Zone III. This covers about 53,000 km² and has medium agricultural potential. The zone contains most of the large-scale mixed farming areas in which hybrid maize, wheat and barley are important crops. In smallholder areas maize is the dominant crop; but cotton, groundnuts, pulses and oilseeds are also grown and have considerable potential for expansion and improved productivity. Livestock can be kept intensively on leys with carrying capacities similar to Zone II. Natural grassland can carry one stock unit per 2.0 ha.

Zone IV. Covering about 53,000 km², this zone presently has only marginal agricultural potential. Commercial ranching on well-managed natural pasture can support one stock unit per 4.0 ha or less. Subsistence crop farming and livestock are important in smallholder areas. Drought-escaping Katumani maize has been developed for this zone and sorghum, cotton, pulses and oilseeds are also grown.

Zone V. This covers just over 300,000 km² and has moderate rangeland development potential. The zone is the focus of many of the present and proposed livestock development programs, with wildlife important in many areas. Increasing subsistence-oriented shifting cultivation reflects population pressure on better lands, and the risk of crop failure is great.

Zone VI. This zone extends to about 112,000 km² in northern Kenya. Rainfall is sparse and erratic, contributing to the flush growth of predominantly annual grass species. The pastoralists in the zone are mostly nomads.

2. Rift Valley Province is Kenya's largest province and the least homogeneous in terms of ecological potential and land use. It extends from Kenya's northern border with Ethiopia and Sudan to the southern border with Tanzania, covering a land area of about 172,000 km². This is divided among the ecological zones approximately as follows: II - 26,700 km²; III - 15,300 km²; IV - 34,500 km²; V - 75,400 km²; VI - 20,600 km². The high potential land of Zone II is mainly on the highlands west of the Rift from the Mau and Kericho Highlands through to the Cherangani Range. The medium potential land of Zone III is found at lower altitudes and is often peripheral to the main ranges. The major Zone III areas are in the Uasin Gishu and Trans Nzoia plateaus and the western extremities of Kericho and Narok Districts (the Trans-Mara). Zone IV land (with good range but low agricultural potential) is found on the floor of the Central Rift Valley, the Masai plains of Narok and Kajiado and the Laikipia plains northeast of the Aberdare Range. Zones V and VI with medium to low range potential occupy the entire northern half of the province and a smaller area around Lake Magadi at the southern end of the Rift Valley (Kenya portion). The character of the local soils reduces agricultural potential below that of the eco-climatic zone generally. Soils with impeded drainage occur in the Sotik area of Kericho District and extend south into the Trans-Mara area of Narok. Such soils also occur on the top of the Mau range west of Mau Narok, and over much of the Uasin Gishu Plateau. The dominant farming system is that of the large-scale mixed farms which occupy some of the best agricultural land.

3. Central Province, with an area of just over 13,100 km², embraces most of the Aberdare Range and the southwestern portion of Mt. Kenya. Most of the land is of high or medium potential - with about 9,300 km² falling into ecological Zone II and about 3,000 km² into Zone III. There is a small area of low potential land (Zone V) in the east of the Province as the highlands give way to the eastern plains. The balance, over 500 km², consists of the Afro-Alpine zone on the summits of Mt. Kenya and the Aberdares. Soils in general are good, with the major exception being the "vlei" soils (which have impeded drainage) of the Kinangop plateau which lies along the western flank of the Aberdares overlooking the Rift Valley. There is some large-scale farming in Central Province but it by no means dominates the scene as it does in Rift Valley. Small tea estates and mixed farms occur in the western part

of Kiambu. While the tea enterprises represent good land use, the mixed farms are likely to be broken up into smaller units. Large coffee estates are common in the belt between Nairobi and Thika. They are efficiently run, often have supplemental irrigation, and frequently yield several times more than smallholder coffee.

Population and Land Tenure

4. The problem of developing productive farming systems in this extremely complex range of ecological conditions is made more difficult by the rapid rate of growth of population and by tribal influences on the distribution of land. Kenya's population was estimated at 11.2 million in 1970 and at 12.1 million in 1972. The current population growth rate is probably about 3.3% per year, a high figure by any standard. Population pressure is greatest in ecological Zones II and III, although this pressure is building in all areas through natural growth, and in Zones IV and V as a result of migration. On medium and high potential land available for small-scale farming in Western, Nyanza and Central Provinces, overall densities approximate 150 to 200 persons per km² on holdings averaging 3 ha. There are localities (such as the Vihiga Division of Kakamega District in Western Province) with densities of about 500 per km² on holdings of no more than one ha.

5. In the period before and just after Independence (1963), the land tenure problem centered on the occupation of high quality land by Europeans in the "Scheduled Areas". ^{1/} In the 1960's the policy was to transfer such land back to Kenyan proprietorship. There were two main elements in this transfer: first, settlement programs whereby the large farms were subdivided into productive smallholder plots, and secondly, direct transfer of large farms as units to individuals, groups, companies and quasi-Government authorities (such as the Agricultural Development Corporation). Overall, the complex influences on land ownership have resulted in a wide range in size of holding, forms of ownership, and patterns of production. In turn, these have created difficult policy issues concerning employment opportunities, income and wealth distribution, and the design of development programs.

6. The present evidence on the size distribution of farms (taking 20 ha as the minimum size of a large farm) is as follows:

- (a) some 2,750 residual "large farms" within the former "Scheduled Areas," as defined in the official Statistical Abstract;
- (b) some 400 individually held large farms plus 40 cooperative units that exist within the formal settlement schemes;
- (c) a number of large farms in Trust Land areas; plus

^{1/} Areas reserved for European settlement.

- (d) ranches held on lease in Government lands and group and individual ranches in Trust Lands.

Omitting this last category, it is estimated that there are in the high and medium potential (arable) areas about 3,000 to 3,200 farms larger than 20 ha in size.

7. Rural family incomes from agriculture are difficult to gauge, but an ILO study has estimated that these would generally fall within the ranges described below:

| | <u>Approximate Annual Household Income</u> ----- Ksh ----- |
|---|---|
| Large-scale farmers | 20,000 or more |
| Medium-scale farmers | |
| less prosperous large farms | 12,000 - 20,000 |
| Prosperous smallholders | 4,000 - 12,000 |
| Less prosperous smallholders | 2,400 - 4,000 |
| Employees in formal sector agriculture | 1,200 - 2,400 |
| Sizeable proportion of smallholdings /1 and workers employed on smallholdings and group owners or cooperative members of large farms | 400 - 1,200 |
| (Most) smallholders, pastoralists, in semi-arid and arid zones, unemployed and landless persons | 400 or less |

/1 Most of the Project group owners would fall into this category.

Mixed Farm Sector

8. There are approximately 2,750 large farms (over 20 ha) in the former Scheduled Areas, about 1,800 of which are mixed farms. Most of these farms are in Rift Valley Province, in Nakuru, Uasin Gishu, Trans Nzoia, Laikipia, Kericho and Nandi Districts. The others are mainly in Central Province, in Nyandarua and Kaimbu Districts. Rainfall in the mixed farm areas ranges from 600 mm/year in the drier parts of Nakuru, up to 1,400 mm/year in the high forest areas of Uasin Gishu, but 1,200 mm would be fairly typical of much of the area. There is a somewhat bimodal rainfall pattern, with first rains peak months generally in April-May and a slight second rains peak in August. (This is not the same as the short rains period experienced in Nairobi and elsewhere which occurs in October/November.)

9. While the farm size varies widely, the typical farm in the Uasin Gishu, Trans Nzoia, and Nakuru areas is about 500 ha (1,250 acres). Generally about 90% of this area is useable land, but frequently 20% of the farm land is only suitable for rough grazing, often because of poorly drained "vlei"

soils or uncleared bush. A range of soil types is found. In Trans Nzoia the soil is largely red loam derived from a granite basement rock, and the soil is generally deficient in phosphate and sometimes in sulphur. In Uasin Gishu the soils are derived from phonolites and range from a red clay loam to a red loam in the higher areas. In general, however, soils are deficient in phosphate, and sometimes sulphur. The loams in the higher areas are generally strongly leached and subject to erosion.

10. The major enterprises throughout most of the Rift Valley mixed farms areas are maize, wheat, barley, dairy cattle, beef cattle; other minor crops are phrethrum, sunflower, beans, English potatoes, wattle, coffee, tea, and citrus. The typical farm is a wheat/maize/dairy farm with perhaps beef cattle on the rough grazing area. The main crops are planted in the long rains (generally about April for maize and June for wheat), and harvesting occurs about November-December. Except for quick maturing crops such as English potatoes and occasionally sunflower (where two crops per year are possible in some areas), generally one crop per year is grown.

11. As a general rule production of the major agricultural commodities in Kenya, especially the grain crops, is characterized by large differences in yields depending on the climate, soils, the level of management and the seed varieties used. There are also large year to year fluctuations in total production of any one commodity in response to weather conditions and sometimes to pricing policies. These characteristics are discussed below for the three major commodities produced in the mixed farming areas.

12. Maize. Maize is Kenya's staple food in terms of both area planted and total output. It is estimated that about one million hectares are grown to maize annually: 61,000 ha by the large-scale farms and the rest by smallholders and subsistence cultivators. Yields, and therefore production, fluctuate widely, although the large-scale farms which commonly use hybrid seeds have consistently higher yields; in 1972 these averaged 1,600 kg per hectare, with the better farmer reaching 4,000 kg/ha. Supplies of double hybrid maize seed are readily obtainable as a result of a successful multiplication scheme with new varieties initiated at the plant breeding station at Kitale. The use of herbicides complements the use of hand and mechanical weeding. The optimum rates of fertilizer applications are well known and published in the District Guidelines available to growers. Pests and diseases are not numerous: the varieties used are immune to white mildew and resistant to the leaf rusts found in Kenya, and stalk borer is easily controlled by spraying or dusting.

13. Wheat. Wheat is grown in the high and the medium potential areas at altitude of 1,850 to 3,000 meters ^{1/} by large-scale farmers using modern power equipment. The crop is not suitable for smallholder cultivation due to its high machinery requirements. Production declined drastically in the period 1968-72, apparently in response to consistently low yields

^{1/} This is generally the area in which most of the Project farm lie.

resulting from low standards of management and to low domestic wheat prices; production also suffered as a result of competition from the dairy and the maize industries. Yields in this period increased significantly, however, and average 1,575 kg/ha. ^{1/} Due in part to variable rainfall - which even in a normal year can cause moisture stress during the growing season - yields are lower in Kenya than in the main wheat growing areas of the world. Stem rust is a recurring problem as constant mutation gives rise to ever-changing strains which break through the resistance barrier created by the wheat breeders. However, the plant breeding station at Njoro has extensive experience in this field and at present is well ahead in the race to produce new varieties. In most Kenya soils phosphatic fertilizers are essential and good crops are dependent on proper and timely applications. It is extremely important that the overall area planted to wheat be significantly increased over the next several years. This should be possible provided that the price paid to growers keeps pace with rising costs of machinery, fuel and fertilizers and that Government policy allows the timely supply of inputs.

14. Milk. Kenya's dairy herd was comprised of about 400,000 mature exotic cows in 1972, and the herd is expected to reach about 625,000 head by 1978. Milk yields average 830 kg per cow per year for these improved types, compared to only 150 kg per cow per year for the unimproved zebu, and it is estimated that these yields can be more than doubled through better livestock husbandry. The yields of over 1,600 kg per cow per year expected in Project farms are not, therefore, unrealistic. In view of these results, there is an extremely high demand for exotic milking strain heifers. Production costs for milk in Kenya are low. Cattle are kept outside due to the equable climate and fodder is derived from natural herbage and planted leys; during the dry season fodder is produced cheaply from hay or maize silage. As production is low, only small amounts of concentrates are required to supplement the grass. Disease control is much dependent on the adequacy of veterinary services. Generally adequate vaccination coverage against anthrax, blackquarter, foot and mouth and other diseases is provided. Tick-borne diseases - of which East Coast fever is the most important - are controlled by constant dipping of the cattle.

Coffee Estate Sector

15. There are a total of 85,000 hectares planted to coffee in Kenya; of these about 30,000 ha (35%) are given over to estate production, and the remainder is cultivated by about 270,000 smallholders with an average coffee area of 0.2 ha each. In the past decade there has been an overall decrease in net planted area. This decline can be attributed to managerial problems and a lack of credit on estates recently transferred to Kenyan ownership and to the rapid spread of Coffee Berry Disease (CBD). Smallholder production was particularly affected by CBD, as the reduced yields combined with lower coffee prices discouraged farmers from undertaking the relatively expensive spraying programs essential to control of the disease. Planting was also

^{1/} This is somewhat less than the 1,800 kg/ha expected from the Project farms after development.

restricted prior to September 1973 under the terms of the International Coffee Agreement. Although this Agreement has been extended on an informal basis until 1975, the export quotas and price guidelines are no longer in force. The new Development Plan calls for the expansion of output over several years by means of a very small expansion of the area under coffee, but mainly by further increases in yield levels. In view of Kenya's relatively small share of the world market, any increase in export sales would not have an appreciable effect on international coffee prices.

16. Total coffee production in Kenya has risen substantially over the last two years, mainly due to a major improvement in yields closely linked to the control of CBD and to price improvements. Average yields were about 900 kg/ha in this period as compared with 700 kg/ha in previous years. The main improvement took place in the estate sector, where yields averaged about 1,300 kg/ha. with many estates producing over 2,000 kg/ha. Some of this improvement could also be accounted for by the development of minor irrigation systems, especially in the Thika District.

KENYA

GROUP FARMS REHABILITATION PROJECT

Agricultural Credit

1. Conventionally, credit is divided into long-term credit, mainly for land purchase; medium-term credit for land development including land clearing, livestock, buildings and equipment purchases; and short-term credit for farm inputs and crop financing. The institutions providing these different forms of credit in Kenya are numerous and varied. First there are the old farm credit institutions which served the European farmers before independence in 1963: these include the commercial banks; the Kenya Farmers Association (KFA) which provides credit in kind through the trade terms which it extends on purchase of agricultural inputs by members; several similar smaller firms; and finally the Government-backed Land and Agricultural Bank now merged into the Agricultural Finance Corporation, which also operates the Guaranteed Minimum Return Scheme (GMR). Secondly, there are the new farm credit institutions which were introduced to help develop smallholder agriculture: (i) the cash crop authorities which provide loans in kind and include the Kenya Tea Development Authority (KTDA), the Pyrethrum Board, the Cotton Lint and Seed Marketing Board and the Coffee Board; (ii) the Ministry of Settlement which has assisted some 30,000 settlers; (iii) the cooperative movement, specially the cooperative societies associated with coffee production, and the Cooperative Production Credit Scheme (CPCS); and (iv) the experimental small-scale lending schemes of the major commercial banks, the FAO input supply schemes and various related pilot programs. The British Land Transfer Program (and its related development schemes) was instituted to facilitate the transition from the European large-scale commercial agriculture to one based on African ownership.

Commercial Banking System

2. The Kenya banking system consists of the Central Bank, 7 commercial banks, the Agricultural Finance Corporation (AFC) and the Cooperative Bank. The Central Bank exercises little control over agricultural lending except by setting the prime interest rate. Four of the commercial banks are significantly involved in agricultural lending: the Kenya Commercial Bank (which is the largest), Barclays Bank International, Standard Bank (Kenya) Limited and the Cooperative Bank of Kenya.

3. Central Bank statistics indicate that as of December 31, 1973, the commercial banking system had total deposits of Ksh 4,559 million and total advances of Ksh 3,228 million, giving a ratio of advances to deposits of 70.8%. Total direct lending to agriculture was Ksh 356 million, or approximately 11% of total advances. The bulk of commercial bank lending to agriculture is to large-scale farming companies and to corporations engaged in

agro-industrial activities; however, commercial banks also handle a number of loans to small farmers and appear interested in expanding this aspect of their activities in spite of management constraints and the high cost of such lending. Loans to large-scale farmers are primarily for working capital, while loans to small farmers are frequently for farm development. Almost all commercial bank lending to the private sector in Kenya is on a secured basis, with land the most common form of asset pledged.

4. Due to the importance of land in relation to the total assets of most farms, and in spite of the many problems mortgages on agricultural land may present to commercial bank lending to farmers, land is the only acceptable security for most lenders to the agricultural sector. Foreclosure involves complicated procedures which take time and involve substantial cost to the creditor. The main alternatives to land as security are movable assets and standing crops; charges against movable assets are sometimes used, but this alternative is not attractive to lenders because of problems of control. Other conditions and terms attached to agricultural credit extended by commercial banks do not differ greatly from those which apply to other sectors. Interest rates vary from 8% to 10% per annum payable on amounts outstanding. In most cases commercial banks are prepared to grant extensions to repayment schedules or maturity dates in cases involving circumstances beyond the farmer's control such as adverse weather conditions or sharp drops in market prices.

5. The commercial banks are better suited to servicing large farmers (particularly with seasonal requirements), but nevertheless each of the three large banks has experimented with smallholder loans projects during the period since Independence (1963). It is evident that the banks are showing increasing interest in agricultural lending, and have therefore appointed several officers specialized in agricultural banking.

6. The Cooperative Bank of Kenya is a specialized institution which began operations in 1969; the Bank has only one office, located in Nairobi. It is registered both as a commercial bank and as a cooperative organization. It does not provide a full range of banking services and has no individual depositors, but serves as the financial arm of the cooperative system. It offers its clientele (which is limited to cooperative societies) banking services designed to meet their specific needs and is also designed to support Government efforts to strengthen the cooperative movement. The aim of the Cooperative Bank is to pool funds generated by cooperatives and to make them available to the cooperative movement. The Bank was founded because it was felt that cooperative deposits in the commercial banking system were large in relation to the services extended to cooperatives by commercial banks and it was also believed that the volume of cooperative transactions was sufficient to justify the existence of a specialized bank. Cooperative societies generally maintain accounts at a commercial bank branch in the nearest commercial center for day-to-day convenience. The Cooperative Bank lends to societies under the cooperative production credit scheme for crop finance, and also provides a limited amount of medium-term finance for coffee factories, cotton ginneries and other investments undertaken by cooperatives.

7. Individual farmers and primary societies may borrow in kind from their societies under a standard formula, subject to the approval of the society's credit committee (which includes the society's management and the local extension officer). The farmer's borrowing limit is set at 2/3 of his annual production turnover handled by the society, based on experience over the past three years; the total credit extended is limited by the amount of credit available to the society from its own members savings and other cooperatives societies. Societies lend against estimated crop proceeds and require that letters of undertaking relating to stop orders be obtained from statutory buying boards before credit is extended. Each borrower must also provide security in the form of two guarantors.

The Agricultural Finance Corporation

8. The Agricultural Finance Corporation (AFC), was established in 1963 as a statutory body (a Government owned body established by law) to take over the credit functions of the two Boards of Agriculture then serving the Scheduled (European) and Nonscheduled (African) Areas, and to work in close cooperation with the Land and Agricultural Bank established in 1931. Under the AFC Act of 1969, AFC was reconstituted with wider additional powers and took over the operations and assets and liabilities of the Land and Agricultural Bank. The present functions of the corporation are to assist in the development of agriculture and agricultural industries by making loans to farmers, cooperative societies, incorporated group representatives, private companies, public bodies, local authorities and other persons engaging in agriculture or agricultural industries. At present, AFC is the primary agricultural credit institution in Kenya and it is the only lender serving the farm sector through a variety of lending programs to both the small and large farms.

9. AFC is presently extending credit under three large-scale schemes supported by external donors. The first of these schemes covers land purchase and development loans financed under the British Land Transfer Program. The major components of the transfer program were: (i) settlement schemes, involving predominantly smallholdings but also including some medium to large-scale farms and some cooperative units; (ii) the British Land Transfer Assisted Owners Scheme through which transfer of farms owned by UK citizens and located outside settlement areas was facilitated by providing funds to the Kenya Government for on-lending to AFC; and (iii) the Stamp Purchase Plan which was initiated in 1966 to finance the purchase and transfer of the remaining British owned farms which comprised some of the best farms in the country and to ensure their continuation as single units in order to safeguard what was considered the unique economic advantages of this scale of activity. The Kenya Government acting through the Agricultural Development Corporation (ADC) acquired 120 farms under the latter plan, and sixteen of the largest and best of these were retained as State Farms and are managed by ADC "in the national interest."

10. The second of the large-scale schemes involves ranching loans funded jointly by IDA, Sweden, and USAID. These are designed to assist in the development of different types of ranching organizations (group, company, individual and commercial ranching enterprises) and involved the establishment and improvement of technical services for the ranching sector plus investment in livestock routes and marketing facilities.

11. The third scheme is comprised of the large farm development programs supported by the overseas development finance institution of the Federal Republic of Germany, Kreditanstalt für Wiederaufbau (KfW), to provide funds for the establishment of state-owned animal breeding farms and for the rationalization of large-scale African farms in the Trans Nzoia District. Funds were made available to AFC for on-lending to a number of large-scale African farmers in the Kitale area whose farms it was expected could benefit from injections of capital. An agricultural team provided under West German foreign assistance is operating in this area, and loan funds were provided to support their extension activities.

12. AFC is also extending credit under two small-scale programs which include smallholder development projects funded by IDA and KfW. These projects were designed to provide credit for on-farm development and to assist in diversifying and improving crops and animal husbandry practices of selected smallholders. Included also is a small poultry development element, financing for farm machinery and equipment, and a technical assistance element providing for an agricultural credit survey in Kenya.

13. In addition to those schemes supported by external donors, AFC operates its own small-scale and large-scale lending schemes from its own resources (which stem largely from capital provided by the Government). The AFC small-scale lending program is mainly directed towards the less favored districts in which land registration has not yet been completed and in which land cannot therefore be used as loan security. As external resources are generally available in areas where land mortgages can be given, AFC is thus able to devote its own resources to the marginal areas. AFC also operates a large-scale lending program from its own resources (i.e. it is not part of any project receiving assistance from multilateral or bilateral donors) which provides both land purchase and development loans as a supplement to those provided by the British Land Transfer Program. Although no breakdown of large-scale loans by purpose is available, it is estimated that approximately 60% of all large-scale loans irrespective of the source of financing are for land purchase, about 30% are for on-farm development and about 7% are for repayment of outstanding debts other than those owed to AFC. These debt consolidating loans are granted to enable AFC to obtain a charge over the farmer's assets, and such a consolidation is generally considered to be to the farmer's advantage as the AFC loan is normally at a lower rate of interest than is obtainable elsewhere and it is usually accompanied by farm planning services.

14. Small-scale programs generally provide funds in amounts up to Ksh 10,000, while large-scale schemes are typically much larger and often finance

quite different farm enterprises. Although the ratio of large-scale to small-scale loans outstanding as of March 31, 1973 stood at 6:1, AFC in fact has many more small-scale than large-scale borrowers. AFC's large-scale portfolio includes land purchase loans which are extended for a 30-year term, while practically all of the small-scale loans are for land and enterprise development, on terms ranging from 3 to 10 years; the small-scale portfolio thus has a more rapid turnover than the large-scale portfolio.

15. AFC acts also as agent for the Guaranteed Minimum Return (GMR) program. This program provides seasonal production credit to growers with more than 15 ha under wheat and hybrid maize. It was originally started in 1942 as a war-time measure to encourage large-scale crop production, and until 1966 applied only to plots of at least 100 acres under specified crops. The program has gradually been reduced in scope with regard to the variety of crops covered, but has been modified and expanded through a lowering of the minimum size of holding eligible for participation. GMR is presently funded by the Cereals and Sugar Finance Corporation (CSFC) and AFC acts as agent for the disbursement and collection of GMR funds. Advances under the program are given up to specified maxima (recently increased to Ksh 350 per acre for the 1975 planting season) and for specified purposes. Interest is charged at 8.5% p.a.; 5% of this goes to CSFC, 3% to AFC as a commission, and 0.5% is credited to Crop Inspection Account. For the 1974 planting season, the amount advanced fell sharply due to the high cost of inputs and the relatively discouraging prices of crops covered by the program, and the restrictions imposed whereby advances are only made to farmers who have repaid previous advances and are in good credit standing with AFC.

16. AFC lends on a secured basis, generally against mortgages on land, and in certain instances charges are also taken against movable property. In general, the coverage should not be less than 1-1/2 times the approved loan. When the loan is in default, the entire amount outstanding becomes due automatically under a clause included in AFC's loan agreements. However, at stages short of foreclosure AFC does not exercise its right to call the entire amount outstanding. The Corporation has recently instituted a policy of paying interest (at approximately 5% p.a.) to borrowers who in effect make pre-payments through monthly payments to AFC in anticipation of larger sums which fall due quarterly.

17. Management and Organization. AFC was transferred to the office of the President in June 1970, but no changes were made in the composition of its Board of Directors. The Ministry of Finance and Planning and the Ministry of Agriculture are represented on the Board by their Permanent Secretaries, and the Secretary of Finance and Planning currently serves as Chairman of the Board. In addition to the two Permanent Secretaries, the board consists of between four and six Ministerial appointees (two of whom are required to have experience in banking or finance) drawn from official and private sources.

18. The General Manager is the chief executive officer of the Corporation but he is not a member of the Board of Directors. He is appointed by the Board with the advise and consent of the Ministers concerned. The present General

Manager was appointed in June 1973 after having been Deputy General Manager of the Corporation since 1965. He is responsible to the Board for the day-to-day operations of the Corporation, and he is assisted by a Deputy General Manager who was previously a senior officer of the Ministry of Agriculture.

19. The Corporation has a fairly centralized structure, with a Head Office located in Nairobi and a network of 32 branch offices which provide coverage of Kenya's principal agricultural districts. During the past two years some decentralization has taken place in an effort to spread the administrative burden and to use the existing staff more effectively. Four Area Managers play a vital role in the decentralization process, as each is responsible for the guidance and supervision of offices in his geographical area of responsibility. Three of the area managers were provided by USAID and the fourth was provided by German Aid. Most of the loan approvals for small-scale loans are made at the Head Office on the recommendations of branch managers, although an initial screening takes place in the field in two stages. In the first stage extension staff advise farmers to purchase an AFC loan application and assist them to fill it in; at the second stage District Loan Committees (which include branch managers and extension officers) advise AFC's head office on the credit-worthiness of prospective borrowers in their respective districts.

20. The Corporation's loan operations are carried out by the Loan Department assisted by two service departments, the Finance and Accounts Department and the Administrative Services Department. AFC's established salary levels are somewhat above Government levels, although they are still below those prevailing in the private sector. The commercial banks, which compete with AFC in the labor market, are free to set their own remuneration schedules. AFC's salary policies probably contribute to the high turnover of local staff, and may also prevent AFC from obtaining the caliber of staff which it so badly needs. At present AFC employs about 15 expatriates, mostly on bilateral aid, some of whom are due to leave shortly; these include the head of the Loan Department and the Financial Controller. The General Manager is at present engaged in a reorganization of the management structure and is also reconsidering AFC's salary scale, taking into account the conditions prevailing in the commercial sector. Any such reorganization would be submitted to the Board of AFC for approval and would thereafter be transmitted to IDA prior to implementation.

21. Financial Resources. The bulk of AFC's financial resources is provided by the Government. As of March 31, 1973, about Ksh 202 million (US\$28.7 million) out of total funds of Ksh 251 million (US\$35.6 million) were financed by Government. AFC's capital consists partly of irredeemable or ownership capital, some of which is interest-bearing (originally belonging to the predecessor corporation, the Land and Agricultural Bank), and the remainder is interest-free grants, and redeemable or long-term debt capital. As of March 31, 1973, irredeemable capital amounted to Ksh 126 million (US\$17.6 million), of which Ksh 46 million (US\$6.4 million) were interest free grants. Redeemable loans which include proceeds of loans to Government from IDA and other external sources which were on-lent to AFC amounted to Ksh 125

million (US\$17.5 million) as of that date. Prior to the effectiveness of the IDA Smallholder Credit Project in 1967, interest was charged to AFC by Government at 6% p.a., but since that date all funds have been provided at 3.5% p.a. in accordance with the terms of that credit which stipulated that Government would not charge more than 3.5% p.a. on any future loans to AFC made while AFC is indebted with respect to that project. For fiscal year 1973 the blend of interest payable averaged 4.5% on interest bearing capital or 3.5% on total resources including interest free grants.

22. Results of Operations and Projections. Since reorganization in 1969, total small and large-scale loans outstanding increased from Ksh 158 million (US\$22.1 million) to Ksh 244 million (US\$34.2 million) in 1973. The amount of resources applied to large-scale loans is approximately six times that applied to small-scale loans. In the second IDA Smallholder Credit Project in 1972, it was agreed that AFC's lending rate would be raised from 7.5% p.a. to 8% p.a. This rate applied to all loans under all projects made after January 1, 1973 and also to interest charged on amounts overdue after that date. For fiscal year 1973, the blend of interest receivable averaged 7% on AFC's total portfolio and will improve considerably in future as the interest rate has recently been increased to 9% per annum.

23. AFC's small-scale loans involve considerable overhead and administrative costs in relation to the principal amounts involved. Moreover, AFC's large-scale clients include some who may not have been able to borrow from private institutions or commercial sources, indicating a higher risk position. Apart from the financial and economic reasons that dictated the lowering of interest chargeable on funds made available to AFC and an increase in the rate of interest charged by AFC on its loans to borrowers, another compelling reason for these adjustments has been the inability of AFC to break even.

24. Financial projections for the fiscal years 1975 to 1979 were prepared by AFC. It was assumed that the net portfolio (i.e. loans outstanding at the beginning of year plus disbursements less repayments during the year) would increase by 10% yearly except for 1975, where a 17% increase was taken into consideration to make up for the slow increase in fiscal year 1974 which was caused by slow processing of loans and the accumulation of undisbursed funds. Net funds making up the ownership and debt capital of the corporation were assumed to increase by the same amount as the increase in net portfolio. On the other hand, other income was assumed to remain constant, as the commission earned on GMR is expected to decrease as the program declines in importance while others would show a slight increase due to the increase in interest earned on idle funds. Salaries were budgeted for 1974-75 at an increase of 26% over 1974 (due to a 15% increase in pay and an increase in number of staff); however, for future years it was assumed that salaries would increase annually by an average of 5% while other administrative expenses would increase by 10% p.a. Provisions for bad and doubtful debts have been added yearly at 1% of the total portfolio outstanding at the end of each year as has been the policy of the corporation in recent years.

Interest receivable, which in fiscal year 1973 averaged 7% of the total portfolio outstanding, would improve on average by about 0.2 p.a. with the amortization of old loans at interest rates ranging from 5% to 6% and the issue of new loans at 7% and 8% and beginning in the last quarter of 1974 at 9%. On the other hand, cost of funds would decrease by 0.1% p.a. due to the lower rate of interest at which the Corporation is obtaining additional funds from the Government. In spite of the gradual and continuing improvement in the spread, projections show that AFC even with the recent increase in interest rate would continue to operate at a loss for several years - although on a decreasing scale ranging from Ksh 2.5 million in 1975 to Ksh 450,000 in 1977. It should then operate at a profit which would steadily increase with increased volume of lending. The recent increase in interest is important in allowing AFC to move towards a balanced budget.

25. AFC has for several years been experiencing delays in the preparation of accounts and production of timely statements for billing purposes because of problems with accounting machines. A new computer has been installed, and it is expected that all accounts would be on the computer by the end of 1974. The small-scale loans have already been programmed, and after a few teething problems at the outset it is now possible to obtain an up-to-date aging schedule of arrears of small-scale loans. The preparation of loan statements and a regular monthly billing system will thereby be made more efficient, and AFC's branches would be expected to follow up persistent defaulters, thus hopefully bringing about a radical improvement in the arrears situation. As of March 31, 1973, arrears on small-scale loans as a percentage of total small-scale loans outstanding (inclusive of arrears) amounted to 24.3% (an increase of approximately 2% over 1971), while arrears on large-scale loans oscillated around 14% of total large-scale loans over the years. The aging schedule of arrears as at March 31, 1973, shows that 43% of small-scale loans and 47% of large-scale loans are over 1 year old. In recent years AFC has followed the practice of adding 1% of the total portfolio outstanding at year end to the provision for bad and doubtful debts calculated on a statistical basis without any reference to the actual loans. This has accumulated over the years and as of the end of fiscal year 1973 stood at Ksh 16.7 million, or approximately 7% of total loans outstanding including arrears. AFC has agreed to study the arrears situation, and the auditors are expected to look into the adequacy of the provision for bad and doubtful debts. Some opinion was voiced that the present provision is excessive, which if correct would relieve future earnings.

26. AFC's Project cash flow is at Annex 2, Table 4. On-lending to AFC by Government from the proceeds of the IDA Credit and Government's own resources would be at 3% p.a. on amounts outstanding. Repayment would be spread over a period of 30 years including a 3 year grace period to allow for delays in repayment by farmers. It was assumed that, on average, 5% of the installments due in each year would be written off as bad and that 20% would be late in being repaid (half would be repaid in the following year and the

remaining half in the year after). Based on these assumptions, AFC would face a cash deficit in the second year only of the Project and would begin to show a reasonable surplus from the third year onward.

27. Loans advanced during 1972 reached their highest level in the history of AFC, with approximately Ksh 76 million being disbursed during that fiscal year. Advances in 1973 fell below that figure due to an accumulation of approved but unprocessed loans created by a bottleneck in the legal department. This situation is expected to be corrected within fiscal year 1974. Disbursements under the new Project are expected to reach approximately Ksh 19 million in each of the third and fourth years, and at the peak would represent 25% of AFC's annual volume of operations. However, these loans are to large-scale farms and are few in number and, therefore would represent a much smaller percentage if analyzed on the basis of the number of operations. Any additional staff requirements due to this increase have already been adequately provided for and no further increases would be necessary.

East African Acceptances

28. East African Acceptances (EAA) is a financial institution incorporated in Kenya in 1968 with a fully paid up authorized share capital of Ksh 5 million. Shareholders are Standard Bank, London, 30%; Barclays Bank, London, 30%; Latham, 22%; and Brooke Bond, 18%. At present, due to Central Bank regulations to stop dealings abroad, EAA has accumulated liquid funds that are tied up in Kenya. In order to provide an outlet for these funds, EAA has begun providing working capital along with management expertise to selected coffee estates.

29. EAA has set up an Estate Management Division, which is now in the process of being formed into a subsidiary corporation to be known as East African Acceptances Estate Management Limited, to provide technical management and operating finance for coffee estates. This technical management service is based at Thika with a head office in Nairobi. The Thika office has two expatriate consultants, one office manager and supporting clerical and secretarial staff. As business activity expands as EAA takes over the management of an increasing number of farms, group managers will be appointed from experienced expatriate farmers to supervise up to 800 ha, or about 10 farms of an average 80 ha each. The estate managers would be carefully selected from graduates of Thompsons Falls Training Institute or from persons with proven ability and experience on other coffee estates.

30. By mid-1974 EAA was managing a total of 1,750 ha of coffee. The original pattern was for EAA to simply provide a visiting manager for the estates to which it furnished credit, but this did not prove successful and EAA now refuses to get involved unless they have complete control of the farm. Their standard management fees are charged on a sliding scale of Ksh 420 per acre for the first 100 acres, Ksh 360 per acre for the second hundred, Ksh 300 per acre for the third hundred, and Ksh 240 per acre for any acreage in excess of 300. As marketing agent, EAA also charges a normal commission of 1-1/2%

on the gross value of the crop to cover auction and other expenses and to pay classification charges. In addition, secretarial and accounting services are offered at Ksh 80 per acre, but in most cases a fee is agreed to on a lump sum basis. EAA also provides short-term financing at about 10% p.a. for short-term development and working capital. EAA's overall charges are considered reasonable.

31. EAA has thus far confined itself to the management of coffee estates but eventually expects to be able to go into mixed farming. The owners of those estates under EAA management are expected to be able to take over the management of their own estates at the end of the agreed contract period, which is normally five years.

| Category | 1975 | 1976 | 1977 | 1978 | 1979 |
|------------------------|-----------|-----------|-----------|-----------|------------|
| Land cleared (sq. ft.) | 1,000 | 1,200 | 1,500 | 1,800 | 2,000 |
| Planting material | 50,000 | 60,000 | 75,000 | 90,000 | 100,000 |
| Planting material | 100,000 | 120,000 | 150,000 | 180,000 | 200,000 |
| Planting material | 200,000 | 250,000 | 300,000 | 350,000 | 400,000 |
| Planting material | 300,000 | 350,000 | 400,000 | 450,000 | 500,000 |
| Planting material | 400,000 | 450,000 | 500,000 | 550,000 | 600,000 |
| Planting material | 500,000 | 550,000 | 600,000 | 650,000 | 700,000 |
| Planting material | 600,000 | 650,000 | 700,000 | 750,000 | 800,000 |
| Planting material | 700,000 | 750,000 | 800,000 | 850,000 | 900,000 |
| Planting material | 800,000 | 850,000 | 900,000 | 950,000 | 1,000,000 |
| Planting material | 900,000 | 950,000 | 1,000,000 | 1,050,000 | 1,100,000 |
| Planting material | 1,000,000 | 1,050,000 | 1,100,000 | 1,150,000 | 1,200,000 |
| Planting material | 1,100,000 | 1,150,000 | 1,200,000 | 1,250,000 | 1,300,000 |
| Planting material | 1,200,000 | 1,250,000 | 1,300,000 | 1,350,000 | 1,400,000 |
| Planting material | 1,300,000 | 1,350,000 | 1,400,000 | 1,450,000 | 1,500,000 |
| Planting material | 1,400,000 | 1,450,000 | 1,500,000 | 1,550,000 | 1,600,000 |
| Planting material | 1,500,000 | 1,550,000 | 1,600,000 | 1,650,000 | 1,700,000 |
| Planting material | 1,600,000 | 1,650,000 | 1,700,000 | 1,750,000 | 1,800,000 |
| Planting material | 1,700,000 | 1,750,000 | 1,800,000 | 1,850,000 | 1,900,000 |
| Planting material | 1,800,000 | 1,850,000 | 1,900,000 | 1,950,000 | 2,000,000 |
| Planting material | 1,900,000 | 1,950,000 | 2,000,000 | 2,050,000 | 2,100,000 |
| Planting material | 2,000,000 | 2,050,000 | 2,100,000 | 2,150,000 | 2,200,000 |
| Planting material | 2,100,000 | 2,150,000 | 2,200,000 | 2,250,000 | 2,300,000 |
| Planting material | 2,200,000 | 2,250,000 | 2,300,000 | 2,350,000 | 2,400,000 |
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| Planting material | 2,500,000 | 2,550,000 | 2,600,000 | 2,650,000 | 2,700,000 |
| Planting material | 2,600,000 | 2,650,000 | 2,700,000 | 2,750,000 | 2,800,000 |
| Planting material | 2,700,000 | 2,750,000 | 2,800,000 | 2,850,000 | 2,900,000 |
| Planting material | 2,800,000 | 2,850,000 | 2,900,000 | 2,950,000 | 3,000,000 |
| Planting material | 2,900,000 | 2,950,000 | 3,000,000 | 3,050,000 | 3,100,000 |
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| Planting material | 5,000,000 | 5,050,000 | 5,100,000 | 5,150,000 | 5,200,000 |
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| Planting material | 7,500,000 | 7,550,000 | 7,600,000 | 7,650,000 | 7,700,000 |
| Planting material | 7,600,000 | 7,650,000 | 7,700,000 | 7,750,000 | 7,800,000 |
| Planting material | 7,700,000 | 7,750,000 | 7,800,000 | 7,850,000 | 7,900,000 |
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| Planting material | 7,900,000 | 7,950,000 | 8,000,000 | 8,050,000 | 8,100,000 |
| Planting material | 8,000,000 | 8,050,000 | 8,100,000 | 8,150,000 | 8,200,000 |
| Planting material | 8,100,000 | 8,150,000 | 8,200,000 | 8,250,000 | 8,300,000 |
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| Planting material | 8,400,000 | 8,450,000 | 8,500,000 | 8,550,000 | 8,600,000 |
| Planting material | 8,500,000 | 8,550,000 | 8,600,000 | 8,650,000 | 8,700,000 |
| Planting material | 8,600,000 | 8,650,000 | 8,700,000 | 8,750,000 | 8,800,000 |
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| Planting material | 8,900,000 | 8,950,000 | 9,000,000 | 9,050,000 | 9,100,000 |
| Planting material | 9,000,000 | 9,050,000 | 9,100,000 | 9,150,000 | 9,200,000 |
| Planting material | 9,100,000 | 9,150,000 | 9,200,000 | 9,250,000 | 9,300,000 |
| Planting material | 9,200,000 | 9,250,000 | 9,300,000 | 9,350,000 | 9,400,000 |
| Planting material | 9,300,000 | 9,350,000 | 9,400,000 | 9,450,000 | 9,500,000 |
| Planting material | 9,400,000 | 9,450,000 | 9,500,000 | 9,550,000 | 9,600,000 |
| Planting material | 9,500,000 | 9,550,000 | 9,600,000 | 9,650,000 | 9,700,000 |
| Planting material | 9,600,000 | 9,650,000 | 9,700,000 | 9,750,000 | 9,800,000 |
| Planting material | 9,700,000 | 9,750,000 | 9,800,000 | 9,850,000 | 9,900,000 |
| Planting material | 9,800,000 | 9,850,000 | 9,900,000 | 9,950,000 | 10,000,000 |

KENYA

GROUP FARMS REHABILITATION PROJECT

AFC Financial Statements - Balance Sheet
(Ksh,000)

| | 1971 | Audited | 1972 | 1973 | Unaudited | 1974 | 1975 | 1976 | Projections 1/ | 1977 | 1978 | 1979 |
|---------------------------------|---------|---------|---------|---------|-----------|---------|---------|---------|----------------|---------|---------|------|
| As of March 31, | | | | | | | | | | | | |
| Loans to Farmers: | | | | | | | | | | | | |
| Large-scale | 168,043 | 185,172 | 209,767 | 224,859 | 224,859 | 258,944 | 284,400 | 312,780 | 343,740 | 378,140 | 378,140 | |
| Small-scale | 21,593 | 29,142 | 33,797 | 38,381 | 38,381 | 42,802 | 46,946 | 51,566 | 56,606 | 62,206 | 62,206 | |
| Total | 189,636 | 214,314 | 243,564 | 263,240 | 263,240 | 301,746 | 331,346 | 364,346 | 400,346 | 440,346 | 440,346 | |
| Provision for doubtful debts | 11,086 | 13,763 | 16,743 | 14,565 | 14,565 | 22,512 | 25,812 | 29,412 | 33,412 | 37,812 | 37,812 | |
| Other Loans and Deposits | 178,550 | 200,551 | 226,821 | 248,675 | 248,675 | 279,234 | 305,534 | 334,934 | 366,934 | 402,534 | 402,534 | |
| Total | 24,394 | 23,248 | 11,875 | 20,747 | 20,747 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400 | 8,400 | |
| Current Assets: | | | | | | | | | | | | |
| Debtors and accruals | 2,856 | 4,975 | 7,226 | 9,962 | 9,962 | 9,052 | 9,940 | 10,930 | 12,010 | 13,210 | 13,210 | |
| Cash and bank balances | 6,683 | 7,275 | 14,092 | 11,019 | 11,019 | 12,478 | 12,840 | 13,600 | 15,370 | 18,120 | 18,120 | |
| Total | 9,539 | 12,250 | 21,318 | 20,981 | 20,981 | 21,530 | 22,780 | 24,530 | 27,380 | 31,330 | 31,330 | |
| Fixed Assets | 6,077 | 6,181 | 6,004 | 5,802 | 5,802 | 6,190 | 6,190 | 6,190 | 6,190 | 6,190 | 6,190 | |
| Total Assets | 218,560 | 242,230 | 266,018 | 296,205 | 296,205 | 315,354 | 342,904 | 374,054 | 408,904 | 448,454 | 448,454 | |
| Less: | | | | | | | | | | | | |
| Current Liabilities | | | | | | | | | | | | |
| Deposits at call | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | 2,107 | |
| Land purchase deposits | 2,082 | 7,372 | 1,649 | 2,780 | 2,780 | 2,753 | 2,753 | 2,753 | 2,753 | 2,753 | 2,753 | |
| Creditors and accrued charges | 5,151 | 5,093 | 6,521 | 5,491 | 5,491 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | |
| Total | 9,340 | 14,572 | 10,277 | 10,378 | 10,378 | 8,860 | 8,860 | 8,860 | 8,860 | 8,860 | 8,860 | |
| Financed by: | | | | | | | | | | | | |
| Loans and Grants | 209,220 | 227,658 | 255,741 | 285,827 | 285,827 | 306,494 | 334,044 | 365,194 | 400,044 | 439,594 | 439,594 | |
| Irredeemable Loans | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | 80,100 | |
| Redeemable Loans | 78,697 | 97,642 | 125,230 | 150,737 | 150,737 | 181,900 | 211,500 | 244,500 | 280,500 | 320,500 | 320,500 | |
| Interest free Grants | 44,560 | 44,827 | 45,822 | 47,080 | 47,080 | 45,100 | 45,100 | 45,100 | 45,100 | 45,100 | 45,100 | |
| Total | 203,457 | 222,569 | 251,152 | 277,917 | 277,917 | 307,100 | 336,700 | 369,700 | 405,700 | 445,700 | 445,700 | |
| Accumulated Surplus/(Deficit) | 5,763 | 5,089 | 4,589 | 7,910 | 7,910 | (606) | (2,556) | (4,506) | (5,656) | (6,106) | (6,106) | |
| Total Loans, Grants and Surplus | 209,220 | 227,658 | 255,741 | 285,827 | 285,827 | 306,494 | 334,044 | 365,194 | 400,044 | 439,594 | 439,594 | |

1/ Without project.

KENYA

GROUP FARMS REHABILITATION PROJECT

**AFC Financial Statements - Income Statements
(Ksh'000)**

| Year Ended March 31, | Audited | | Unaudited | | Projections 1/ | | | | |
|-------------------------|---------|--------|-----------|---------|----------------|---------|--------|--------|--------|
| | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
| Interest earned | 13,130 | 15,678 | 17,128 | 18,517 | 21,557 | 24,800 | 27,600 | 31,100 | 34,500 |
| Less: Interest payable | 7,861 | 8,431 | 9,158 | 9,948 | 11,069 | 11,900 | 12,900 | 14,000 | 15,200 |
| Net | 5,269 | 7,247 | 7,970 | 8,569 | 10,488 | 12,900 | 14,700 | 17,100 | 19,300 |
| Other Income | 2,430 | 2,951 | 4,301 | 3,338 | 2,919 | 3,000 | 3,100 | 3,200 | 3,300 |
| Total | 7,699 | 10,198 | 12,271 | 11,907 | 13,407 | 15,900 | 17,800 | 20,300 | 22,600 |
| Administrative Expenses | 5,990 | 7,401 | 8,757 | 10,037 | 11,998 | 12,800 | 13,600 | 14,500 | 15,400 |
| Provision for bad debts | 2,364 | 2,804 | 3,249 | (2,255) | 3,000 | 3,300 | 3,600 | 4,000 | 4,400 |
| Depreciation | 432 | 667 | 765 | 837 | 871 | 950 | 1,050 | 1,150 | 1,250 |
| Total | 8,786 | 10,872 | 12,771 | 8,619 | 15,869 | 17,050 | 18,250 | 19,650 | 21,050 |
| Net Income/(Loss) | (1,087) | (674) | (500) | 3,288 | (2,462) | (1,150) | (450) | 650 | 1,550 |

1/ Without project.

February 13, 1975

KENYA

GROUP FARMS REHABILITATION PROJECT

AFC Financial Statements - Cash Flow
(Ksh '000)

| Year Ended March 31, | Audited | | Unaudited | | Projections | | | | |
|--|---------|---------|-----------|---------|-------------|---------|--------|--------|--------|
| | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
| Net Income/(Loss) | (1,087) | (674) | (500) | 3,288 | (2,462) | (1,150) | (450) | 650 | 1,550 |
| Depreciation | 432 | 667 | 765 | 837 | 871 | 950 | 1,050 | 1,150 | 1,250 |
| Provision for doubtful debts | 2,364 | 2,804 | 3,249 | (1,606) | 3,000 | 3,300 | 3,600 | 4,000 | 4,400 |
| Total Cash Generation | 1,709 | 2,797 | 3,514 | 2,519 | 1,409 | 3,100 | 4,200 | 5,800 | 7,200 |
| Net increase in loan funds | 13,713 | 19,112 | 28,583 | 26,765 | 30,200 | 29,600 | 33,000 | 36,000 | 40,000 |
| Decrease in other loans and deposits | 5,847 | 1,146 | 11,373 | (8,872) | (414) | - | - | - | - |
| Total Funds Available | 21,269 | 23,055 | 43,470 | 20,412 | 31,195 | 32,700 | 37,200 | 41,800 | 47,200 |
| Applied to: | | | | | | | | | |
| Net increase in loans to borrowers | 17,613 | 24,678 | 29,250 | 19,676 | 43,500 | 29,600 | 33,000 | 36,000 | 40,000 |
| Decrease in current liabilities | 3,848 | (5,232) | 4,295 | (101) | (2,625) | - | - | - | - |
| Additions to fixed assets | 741 | 771 | 588 | 635 | 876 | 950 | 1,050 | 1,150 | 1,250 |
| Increase in debtors | (594) | 2,119 | 2,251 | 2,736 | 358 | 888 | 990 | 1,080 | 1,200 |
| Bad debts written off | 8 | 127 | 269 | 539 | - | - | - | - | - |
| Total | 21,616 | 22,463 | 36,653 | 23,485 | 42,109 | 31,438 | 35,040 | 38,230 | 42,450 |
| Surplus/(Deficit) | (347) | 592 | 6,817 | 3,073 | (10,914) | 1,262 | 2,160 | 3,570 | 4,750 |
| Opening Cash Balance | 7,030 | - | - | - | - | - | - | - | - |
| Annual Surplus/(Deficit) without Project | 6,683 | 7,275 | 14,092 | 11,019 | 105 | 1,367 | 3,527 | 7,097 | 11,847 |
| Annual Surplus/(Deficit) from Project I/ | - | - | - | - | - | 17 | (407) | 792 | 1,229 |
| Total Annual Surplus/(Deficit) | - | - | - | - | 105 | 1,384 | 3,120 | 7,889 | 13,076 |

KENYA
GROUP FARMS REHABILITATION PROJECT

AFC Project Cash Flow 1/
(Ksh '000)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 5/ |
|-------------------------------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|------------|
| CASH INFLOW: | | | | | | | | | | | |
| From Government: | | | | | | | | | | | |
| for working capital | 2,136 | 15,060 | 18,934 | 19,464 | 8,078 | 68,872 | - | - | - | - | - |
| for additional staff costs | 1,180 | 3,023 | 3,625 | 3,625 | 3,625 | 16,078 | - | - | - | - | - |
| for study | 220 | 67 | 67 | 67 | 67 | 641 | - | - | - | - | - |
| Sub-total | 9,336 | 18,303 | 22,626 | 23,356 | 11,770 | 85,591 | - | - | - | - | - |
| Repayments by Borrowers | | | | | | | | | | | |
| Mixed Farms: | | | | | | | | | | | |
| long-term | - | 107 | 427 | 985 | 1,643 | 3,162 | 2,118 | 2,293 | 2,293 | 2,293 | 2,293 |
| medium-term | - | 281 | 958 | 1,900 | 2,898 | 6,046 | 3,317 | 3,317 | 3,317 | 3,036 | 2,359 |
| working capital | - | 2,167 | 5,453 | 9,089 | 10,283 | 26,992 | 6,519 | 2,470 | - | - | - |
| Coffee Estates | - | 62 | 174 | 286 | 398 | 820 | 448 | 448 | 448 | 448 | 448 |
| long-term | - | 187 | 1,157 | 1,642 | 1,642 | 3,658 | 1,940 | 1,940 | 1,940 | 1,753 | 1,268 |
| medium-term | - | 885 | 2,428 | 3,549 | 4,709 | 11,571 | 4,494 | 2,967 | 1,645 | 740 | 362 |
| working capital | - | - | - | - | - | - | - | - | - | - | - |
| Sub-total | - | 3,689 | 10,112 | 16,975 | 21,573 | 52,349 | 18,436 | 13,435 | 9,643 | 8,270 | 6,710 |
| Bad debts 2/ | - | (184) | (506) | (649) | (1,079) | (2,618) | (942) | (672) | (482) | (414) | (336) |
| Late Repayments 3/ | - | (738) | (1,853) | (3,015) | (1,607) | (88) | 88 | 1,354 | 1,298 | 654 | 420 |
| Sub-total | - | 2,787 | 7,953 | 14,111 | 18,687 | 43,718 | 17,982 | 14,117 | 10,459 | 8,510 | 6,824 |
| Total Cash Inflow | 9,336 | 21,070 | 30,579 | 37,467 | 30,657 | 129,309 | 17,982 | 14,117 | 10,459 | 8,510 | 6,824 |
| CASH OUTFLOW: | | | | | | | | | | | |
| Loans to Mixed Farms | | | | | | | | | | | |
| long-term | 1,219 | 3,568 | 5,047 | 5,612 | 3,044 | 18,490 | - | - | - | - | - |
| medium-term | 1,415 | 4,400 | 4,736 | 4,980 | 2,128 | 16,700 | - | - | - | - | - |
| working capital | 2,060 | 5,181 | 8,637 | 9,770 | 6,194 | 31,842 | 2,348 | - | - | - | - |
| Sub-total | 4,735 | 12,149 | 18,420 | 20,362 | 11,366 | 67,032 | 2,348 | - | - | - | - |
| Loans to Coffee Estates | | | | | | | | | | | |
| long-term | 500 | 900 | 900 | 900 | 400 | 3,600 | - | - | - | - | - |
| medium-term | 940 | 2,440 | 2,440 | 2,440 | 1,500 | 9,760 | - | - | - | - | - |
| working capital | 812 | 2,228 | 3,256 | 4,320 | 4,123 | 14,739 | 2,722 | 1,509 | 679 | 314 | - |
| sub-total | 2,252 | 5,568 | 6,596 | 7,660 | 6,023 | 28,099 | 2,722 | 1,509 | 679 | 314 | - |
| Debt Service to Government 4/ | | | | | | | | | | | |
| Principal | 132 | 517 | 1,079 | 2,860 | 2,860 | 5,720 | 2,860 | 2,860 | 2,860 | 2,860 | 2,860 |
| Interest | - | - | - | 3,664 | 2,188 | 5,860 | 2,102 | 2,016 | 1,931 | 1,845 | 1,759 |
| Sub-total | 132 | 517 | 1,079 | 4,324 | 5,048 | 11,580 | 4,962 | 4,876 | 4,791 | 4,705 | 4,619 |
| Additional Staff Costs | 2,180 | 3,023 | 3,625 | 3,625 | 3,625 | 16,078 | 2,200 | 2,720 | 2,520 | 2,400 | - |
| Large-Scale Farm Study | 220 | 220 | 67 | 67 | 67 | 641 | - | - | - | - | - |
| Total Cash Outflow | 9,519 | 21,477 | 29,787 | 36,238 | 26,129 | 123,150 | 12,752 | 9,105 | 7,990 | 7,419 | 4,619 |
| ANNUAL CASH SURPLUS/(DEFICIT) | 17 | (407) | 792 | 1,229 | 4,528 | 6,159 | 5,230 | 5,012 | 2,469 | 1,091 | 2,205 |

1/ Excluding contingencies.
 2/ 5% of instalments due in each year were assumed on average to be bad debts.
 3/ 20% of instalments due in each year would be late, half would be collected in the following year and the other half in the year after.
 4/ Loan repayable over 20 years including 3 years grace period at 11 p.a. on amounts outstanding.
 5/ Subject to any overdue instalments, repayments of medium-term loans should be completed by the end of year 12 and of long-term loans by year 20. Debt service to Government, however, would continue to year 30. Although cash inflow from Project would cease from Year 20 AFC would have the advantage of utilizing the funds collected in previous years until repaid to Government.

KENYAGROUP FARMS REHABILITATION PROJECTEast Africa Acceptances Limited - Balance Sheet
(Ksh'000)Audited
3/31/1973

LIABILITIES:

| | |
|-----------------------------------|---------|
| Depositors accounts ^{1/} | 108,749 |
| Current Liabilities | |
| Sundry creditors | 1,029 |
| Taxation | 1,350 |
| Proposed dividend | 750 |

CAPITAL AND SURPLUS

| | |
|-------------------------------------|--------------|
| Capital | 5,000 |
| Reserve | 210 |
| Surplus | <u>1,843</u> |
| Total Liabilities Capital & Surplus | 118,931 |
| | ===== |

ASSETS:

| | |
|-------------------------------------|------------|
| Cash on hand and at bank | 2,652 |
| Deposits with bank | 14,080 |
| Deposits with financial institution | 1,000 |
| Bills discounted | 170 |
| Advances ^{2/} | 54,198 |
| Provision for doubtful debts | (96) |
| Stock | - |
| Trade Investments | 1,140 |
| Subsidiary Companies | 45,026 |
| Fixed Assets | <u>771</u> |
| Total Assets | 118,931 |
| | ===== |

^{1/} Deposits from holding companies.^{2/} Advances are short-term repayable within one year.

October 10, 1974

KENYAGROUP FARMS REHABILITATION PROJECTAgricultural ServicesMinistry of Agriculture

1. The Ministry of Agriculture has major responsibility for the provision of agricultural services within Kenya, and it provides a wide range of services to farmers. The Ministry is staffed with an adequate number of personnel at the professional, technical and subordinate levels, but these staff often lack practical experience in large-scale farming, and also suffer as a result of the constant shifting of staff from one appointment or district to another. In addition to the Ministry four other Ministries and 18 Statutory Boards also provide substantial public services to farmers.

2. Within the Ministry, the Land and Farm Management Division of the Agricultural Department provides farm management advice to the mixed farm sector, and also has responsibility for the soil conservation and tractor hire services. The Training Division serves as a liaison with the Faculty of Agriculture in Nairobi, as well as the diplomate level college at Egerton which provides diplomate graduates with a wide range of specializations including farm management. It also administers certificate level training at Embu and Bukura as well as farm manager training at Thompsons Falls and Eldoret Training Institutes. The Ministry's Department of Technical Services administers extension programs through the provincial and district staff; these programs are formulated by provincial and district agricultural committees on the basis of guidelines set forth by the Ministry. There are more than sufficient staff detailed to extension work, but the results thus far have been disappointing. This can be attributed partly to the fact that the extension advice is not integrated with an input delivery system, credit channels or marketing facilities, and partially to the constant shifting of staff and their lack of local experience. Several of the parastatal marketing boards (para 5) have also been involved in extension work, and these programs - concentrating as they do on a single commodity - have generally been considerably more successful and effective than the more general programs. Finally, the Department of Veterinary Services has been actively involved in attempts to control the important livestock diseases, as well as in various aspects of veterinary research and vaccine production.

Agricultural Research

3. Agricultural research is dispersed among a large number of research organizations including four units within the Ministry of Agriculture. There is almost no effective coordination between the various programs, however, with the result that while urgent problems in several areas are almost totally

neglected, work in other areas is needlessly duplicated. With a few notable exceptions, the research effort has neglected most food crops. The Kitale and Njoro Plant Breeding stations have, however, been actively engaged in maize and wheat research, and have succeeded in developing several new varieties the staff also advise on disease control and good husbandry practices.

Crop Marketing

4. The farm cooperatives are the major channels for the processing and marketing of certain smallholder cash crops including coffee, pyrethrum, and dairy products. Increasingly they also provide farm inputs such as seed, fertilizer and pesticides; short-term credit; tractor hire services; and cattle dipping facilities. Most of the estimated 1,500 active societies are grouped in cooperative unions on a regional and functional basis; the societies and unions are members of the Kenya National Federation of Cooperatives (KNFC). In addition to the smallholder farm cooperatives, there are a number of formerly European farmer cooperatives: the Kenya Planters Cooperative Union, Ltd. (KPCU); Kenya Cooperative Creameries, Ltd. (KCC); Kenya Farmers Association, Ltd. (KFA); and the Horticultural Cooperative Union (HCU). Their main concern is the processing and marketing of coffee, dairy products, and cereals and fruits, respectively, although KFA is also the largest farm supply merchant. The Department of Cooperative Development (DCD) of the Ministry of Cooperative and Social Services has, however, been given broad regulatory and development functions and participates at all levels and in all activities of the cooperative movement. Its operations have reduced the overall responsibility of the KNFC. While the DCD has mainly been concerned with auditing, supervision and control, a concerted development planning effort has also been initiated.

5. Farm products are marketed through a system of commercial boards, development boards, national and local cooperatives and private industry. The system was originally designed to serve large-scale farmers, and this emphasis has not changed much in recent years. Statutory boards have been established to handle the marketing of the major crops (including wheat, maize, cotton, coffee, pyrethrum, dairy products, beef, tea), and several of these boards have been granted monopoly powers. Both the Wheat Board and the Maize and Produce Boards have complete control over the movement of these grains from one district to another. The Coffee Board not only serves as the sole marketing agent, but also provides farmers with inputs, credit and technical advice. The Kenya Cooperative Creameries is the main marketing agent for milk and dairy products and has a near monopoly on the sale of fluid milk in the major cities. The Kenya Meat Commission has a monopoly on beef exports.

Crop Prices

6. Government exerts a strong direct influence on various crop prices. Under the Price Control Act of 1971 (which aimed at general control of inflation), ceiling prices are fixed at both the wholesale and retail level for

most commodities. In addition, prices for farm product are set by the Government and implemented by parastatal bodies at producer, processor and retail levels for maize, wheat, rice, sugar, milk handled by the KCC, cattle handled by the KMC, certain minor crops marketed by the Maize and Produce Board (MPB), cotton (except at retail), and wattle bark (to producers only). This price intervention system can lead to abrupt changes in price relationships among farm products. For example, farmers who were delivering milk on a non-quota basis in May 1970 at Ksh 0.5 per gallon were receiving about Ksh 3 per gallon in December 1972, a 500% increase.

Seed Inspection

7. The Ministry of Agriculture operates a seed inspection service which enforces legislation and certifies that seed offered for sale meets legally prescribed purity and germination standards. A commercial organization, the Kenya Seed Company (KSC), organizes the multiplication of maize, sunflower, and pasture seed. 1/ The Wheat Board handles wheat seed, although improvements in the seed system for wheat were being considered in late 1972. Under an existing proposal the KSC would take over responsibility for wheat seed multiplication, as the Wheat Board has had difficulty in managing an effective scheme. Distribution of KSC and imported seed is largely handled by the Kenya Farmers' Association (KFA) through a network of depots and agents, mainly in the high potential areas. Planting materials for coffee is handled by the Coffee Board.

Farm Inputs

8. Fertilizers are imported and distributed by private firms, with KFA and one other firm servicing some 60% of the market. Gross imports totalled some 130,000 tons in 1971, mainly for use on large farms for tea, maize, coffee and wheat. Smallholder consumption of fertilizer is limited. Government subsidies on fertilizers totalled close to Ksh 20 million in 1971, an amount sufficient to reduce nitrogen prices by about 10% and phosphatic fertilizers by 30%. The subsidy was reduced in late 1972, however. The consumption of pesticides increased from Ksh 30 million in 1968 to over Ksh 40 million in 1971. Supplies are imported mainly by subsidiaries of foreign chemical firms, which then sell to local distributors.

9. Tractors and combines are used on large farms, and public and private tractor hire services are available to both large and small farms. Seven major international firms deal in farm machinery, with two firms handling some 70% of the total volume. These firms have exclusive franchises or operate as a direct branch of the manufacturer. Low turnover makes necessary a considerable mark-up in order to cover the cost of a reliable service

1/ The remarkable rise in the uptake of improved maize seed is largely due to the efforts of KSC working in close collaboration with the Ministry of Agriculture and its maize breeding staff.

system. Machinery imports are free of customs duties, although customs and direct taxes are paid on tractor fuel. In 1971 there were an estimated 5,000 to 5,500 tractors in use on large-scale farms.

10. Close to 50,000 tons of compound feeds were bought by farmers in 1971, mainly for poultry. There are two large and three small firms as well as a cooperative in the feed-mixing business. A private company is being set up to provide a molasses-urea-mineral-phosphoric acid feed to beef and dairy cattle farmers.

September 25, 1974

KENYA

GROUP FARMS REHABILITATION PROJECT

Detailed Farm Budgets: Mixed Farm
and Coffee Estate Models

1. Farm models have been drawn up for both the mixed farms and the coffee estates to be rehabilitated under the Project. The model represents an "average" farm: each farm included in the Project would, however, be unique and would require its own financial projections, farm policies and plans. Only those farms would be selected which are problem farms, are group-owned, which could be expected to be financially viable, and which had a land/owner ratio such that each owner would have a subsistence plot plus a cash income of not less than Ksh 400 per annum at maturity (year 11).

A. Mixed Farm Model

2. The mixed farms to be rehabilitated under the Project would be located in Uasin Gishu, Nakuru and Trans Nzoia Districts of Rift Valley Province. Although there are some geographical and ecological differences among these districts, it is not considered that they are large enough to affect the model's application. As for example, in the Trans Nzoia District a farm may grow little or no wheat, but maize yields would be about 180 kg/ha higher than the normal; supplementary crops in this area might be sunflowers and beef cattle. Both Uasin Gishu and Nakuru Districts would more closely approximate the model, with the wheat yields being somewhat higher in Nakuru. At higher elevations, alternative crops such as barley and pyrethrum as well as some sheep may be introduced; these would form only minor production elements in the mixed farming scheme, however.

3. The Mixed Farm Model represents a 600 ha farm which, at full development, would produce 140 ha wheat, 37 ha maize, along with dairy and beef cattle. The land in the Rift Valley where the mixed farms would be located is normally cropped on about a four-year crop to three-year grass rotation. Under a loan agreement to be signed between the Agricultural Finance Corporation (AFC) and the group owners of the farm, a resident farm manager satisfactory to and on terms and conditions satisfactory to AFC would be appointed for 5 years by the owners. A Farm Committee (comprising AFC, a Land and Farm Management Officer of the Ministry of Agriculture) would be responsible for farm decisions.

4. Capital investments required to ensure improved farm management would total about Ksh 390,000 per farm (Table 2). The main items to be purchased would be: two tractors, a pick-up truck, a baler, a seed drill, cultivation equipment, fencing, water piping, a milk cooler, and cows and

in-calf heifers. In addition to these investments, each farm would have significant existing assets (financed to some extent out of their substantial existing debt). There would also be a need for incremental working capital during the years following the commencement of the rehabilitation effort.

5. The higher levels of inputs and the improved management introduced under the Project would result in substantially improved yields: wheat yields would increase from 15 bags/ha to 20 bags/ha; maize yields from 25 to 37.5 bags/ha, and milk yields from 750 kg/cow/annum to 1,500 kg. At the same time the cultivated area on each farm would increase from about 90 ha to nearly 300 ha per farm. Beef production would constitute a substitute enterprise while the dairy herd is being built up, and about 30 head would be sold per year for about 7 years.

B. Coffee Estate Model

6. The model coffee estate represents a run-down coffee estate of 50 ha coffee, and 65 ha of grasslands and owners' plots. Most of the farms would be in Thika District, although several would probably be located in Kiambu District. About three-quarters of the approximately 36 estates to be included in the Project would be managed by East African Acceptances Ltd. (EAA), under agreements signed between EAA, the owners and AFC. Management of the remaining estates would be delegated to designated management companies or to visiting agents.

7. On-farm investments for the typical coffee estate would total about Ksh 1.2 million. Much of this total would consist of a floating overdraft supplied by the commercial management company which would build to a high of Ksh 0.8 million in year two of the estate cash flow (Table 11). There are three main contributing factors to this high overdraft level: the rate of recovery of the run-down estates, the staggered coffee payment situation, and finally the fact that loan repayments to AFC would commence in the second year and would be financed out of this overdraft. The staggered payment is caused by the need for the Coffee Board to relate prices paid to farmers to prices obtained on the world market. Grades 1 to 6 are paid on a pool basis, with the pool year running from September 1st to August 31st. The first payment (about 50% of expected price) is made a week after delivery, an interim payment is made in March (or with the first payment for parchment delivered after March), and the final payment is made at the end of the pool year. Since coffee is on the tree for about 9 months, this means there is an 18-month cycle from the beginning of growth to the final payment, a factor which has important repercussions for working capital requirements. The model has been designed to reflect this problem.

8. Annual yields on the run-down estates would be drastically increased from the present average of about 200 kg parchment per ha to over 2,000 kg

Draft Terms of Reference for a Large-Scale Farm Study
by Internationally Recruited Consultants

1. The study which would commence no later than 6 months from the date of effectiveness would review the large-scale farm subsector in Kenya particularly to quantify problems facing large-scale farms. It would make recommendations to Government on the future requirements of the large-scale subsector and as appropriate suggest means of improving its performance and in assisting those farms in the greatest difficulties. The consultants would be approved by IDA and their terms of reference agreed by IDA. The study would include:

- (a) A review of the current position of the large-scale subsector utilizing existing information and by sampling. The review would include estimates on the following:
 - (i) number of farms within each legal form of ownership, e.g. single, partnership, company, cooperative and the apparent effectiveness of each type of ownership in operating the large farms;
 - (ii) proportion of farms within each form of ownership with unregistered members;
 - (iii) the number of large farms considered to be serious or moderate financial and/or debt difficulties as defined ownership form, general locality, type of enterprise, area of land/member etc.;
 - (iv) the number of farms with serious management and social problems and the relationship with financial difficulties; and
 - (v) the relative advantages or disadvantages of large-scale farms as compared to small-scale farms for different types of enterprise, e.g. coffee, wheat, maize etc.
- (b) The study would make recommendation on future policies for large farms in general but in particular for: farms which are presently in various difficulties but which could be potentially viable large-scale enterprises in that they have sufficient area of land that all owners could each have food plots and leave a substantial area for large-scale farming; and farms where the number of owners is such that large-scale farming would not seem feasible under the existing situation because all or most of the land would be required for subsistence plots.

The study would bear in mind Government's broader objectives including self sufficiency in such items as wheat, increasing exports, increasing employment and incomes in agriculture and equalizing incomes. The study would include recommendations on:

- (i) likely future credit requirements and policies for supplying this credit;
 - (ii) needs for restructuring or otherwise reducing present debt burdens;
 - (iii) future need for farm managers and the training needs for supplying them;
 - (iv) whether those farms with high ratio of owners to land area should be subdivided or ownership restructured by repurchase of some shares, etc.;
 - (v) how unregistered owners can best be legally included in farm ownership and what improvements may be made in legal procedures required to expedite this;
 - (vi) pricing policies as they affect the large-scale subsector.
- (c) The study would monitor and evaluate the early progress of the Project and report on the initial implementation of the Project. It would make recommendations on information to be collected on a continuing basis by Project authorities and make initial recommendations on the requirement and scope of a second Group Farms Rehabilitation Project.

2. The study is expected to commence by January 1, 1976 and the consultant's report is expected to be submitted to the Government within about 12 months of its commencement.

KENYA

GROUP FARMS REHABILITATION PROJECT

Mixed Farm Model: Replacement Schedule
(Ksh)

| | Before Development | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Thereafter | F. E. % |
|---|-----------------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|------------|
| REPLACEMENTS: 1/ | | | | | | | | | | | | | |
| Replacement of Tractors and Pick-up: | | | | | | | | | | | | | |
| Existing | 6,840 | - | - | - | - | - | - | - | - | - | - | - | - |
| New | - | - | - | - | - | 18,400 | 45,400 | 45,000 | 50,000 | 18,000 | - | 34,160 | 90 |
| Replacement of Other Machinery: | | | | | | | | | | | | | |
| Existing | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 80 |
| New | - | - | - | - | - | - | - | - | - | - | - | 5,000 | 80 |
| Replacement Total | 12,165 | 5,325 | 5,325 | 5,325 | 5,325 | 29,725 | 50,725 | 50,325 | 23,325 | 5,325 | 5,325 | 41,485 | |

1/ Replacement of Tractors and Pick-up 5-7 years 10% trade-in. Other equipment 10 years 10% trade-in. Existing equipment is replaced at an average annual depreciation rate; new equipment is replaced as required by life of items.

KENYA
GROUP FARMS REHABILITATION PROJECT

Mixed Farm Model: Revenue and Variable Costs
(Ksh)

| | Before Development | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Thereafter | P.2. |
|--|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|------|
| ENTERPRISE CASH REVENUE: | | | | | | | | | | | | | |
| Crops: | | | | | | | | | | | | | |
| Wheat (35/50 per bag) ^{1/} | 81,125 | 81,125 | 13,000 | 284,700 | 284,700 | 284,700 | 284,700 | 284,700 | 284,700 | 284,700 | 284,700 | 284,700 | - |
| Maize (35/50 per bag) ^{2/} | 29,250 | 29,250 | 87,800 | 87,800 | 87,800 | 87,800 | 87,800 | 87,800 | 87,800 | 87,800 | 87,800 | 87,800 | - |
| Sub-total | 110,375 | 110,375 | 306,800 | 372,500 | 372,500 | 372,500 | 372,500 | 372,500 | 372,500 | 372,500 | 372,500 | 372,500 | - |
| Livestock: | | | | | | | | | | | | | |
| Milk (-17/- per kg) ^{3/} | 11,200 | 50,400 | 87,220 | 106,600 | 116,480 | 116,480 | 120,960 | 129,920 | 136,640 | 145,600 | 156,800 | 156,800 | - |
| Cull cows (700/-) | 1,400 | 10,500 | 15,400 | 12,600 | 13,300 | 13,300 | 14,100 | 16,100 | 16,800 | 17,500 | 18,900 | 18,900 | - |
| Surplus heifers (1,400/-) | - | - | - | 600 | - | - | - | - | - | - | - | - | - |
| Cull bulls (600/-) | 5,000 | 1,000 | 2,000 | 7,000 | 21,000 | 26,000 | 30,000 | 30,000 | 1,050 | 1,110 | 1,170 | 1,170 | - |
| Steers (1,000/-) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bull calves (20/-) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sub-total | 17,600 | 64,900 | 104,620 | 126,600 | 150,780 | 155,780 | 164,960 | 177,010 | 154,490 | 164,210 | 186,670 | 186,670 | - |
| TOTAL | 127,975 | 174,275 | 411,420 | 499,100 | 523,280 | 528,280 | 537,460 | 549,510 | 526,990 | 536,710 | 559,170 | 559,170 | - |
| VARIABLE COSTS: | | | | | | | | | | | | | |
| Crops: | | | | | | | | | | | | | |
| Wheat variable costs ^{4/} | 32,250 | 90,500 | 117,500 | 117,500 | 117,500 | 117,500 | 117,500 | 117,500 | 117,500 | 117,500 | 117,500 | 117,500 | 60 |
| Maize variable costs ^{5/} | 13,500 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 42,000 | 50 |
| Livestock: | | | | | | | | | | | | | |
| Dairy cow variable costs ^{6/} | 1,400 | 6,000 | 14,250 | 16,500 | 18,720 | 18,720 | 19,440 | 20,880 | 21,960 | 23,400 | 25,200 | 25,200 | 5 |
| Heifer variable costs ^{7/} | 840 | 9,000 | 5,150 | 8,250 | 11,570 | 12,770 | 13,430 | 13,430 | 15,030 | 15,900 | 16,230 | 16,230 | 5 |
| Steer variable costs ^{8/} | 1,520 | 1,200 | 2,050 | 3,100 | 4,350 | 2,800 | 1,500 | 1,500 | - | - | - | - | 5 |
| Forage: | | | | | | | | | | | | | |
| Establishment variable costs ^{9/} | - | - | 15,280 | 15,280 | 15,280 | 15,280 | 15,280 | 15,280 | 15,280 | 15,280 | 15,280 | 15,280 | 60 |
| Maintenance variable costs | - | - | - | - | 7,600 | 16,200 | 16,200 | 16,200 | 16,200 | 16,200 | 16,200 | 16,200 | 50 |
| Sub-total | 51,110 | 116,700 | 196,530 | 202,630 | 217,020 | 225,270 | 225,350 | 226,790 | 227,970 | 230,340 | 232,410 | 232,410 | - |

1/ Price of wheat @ 35/50 is farm gate price being K.F.A. price less 50 cents per bag transport. This is half of the transport costs; it is assumed the other half is transported by farm tractor which is already allowed for in the high tractors hours/hectare. The K.F.A. price @ 70/- is naked and assures an average of Trade 2.

2/ Maize price is obtained in the same way as wheat price but a 1/- average K.F.A. commission has also been deducted.

3/ Milk @ -17/- per kg includes a provision for transport.

4/ Wheat variable costs @ 7.5/- per hectare before development rising to 1.5/- in Year 1.

5/ Maize variable costs @ 7.5/- per hectare before development rising to 1.5/- in Year 1.

6/ Dairy cow variable costs @ 70/- per cow before development rising to 180/- in Year 1 - 100/-, Year 2 = 150/-, Year 3 = 180/-.

7/ Heifer variable costs @ 40/- per heifer increasing to 133/- in Year 1.

8/ Steer variable costs @ 20/- per head increasing to 50/- in Year 1.

9/ Forage establishment costs 355/- per hectare. Maintenance costs 186/- per hectare.

Mixed Farm Model: Fixed Costs
(Ksh)

| Before Development | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Thereafter | F. E. |
|--|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|-------|
| Wheat 1/ | 25,200 | 42,750 | 42,750 | 34,750 | 32,750 | 32,750 | 32,750 | 32,750 | 32,750 | 32,750 | 32,750 | 60 |
| Maize 2/ | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 60 |
| Ley 3/ | - | 3,700 | 7,550 | 10,650 | 10,650 | 10,650 | 10,650 | 10,650 | 10,650 | 10,650 | 10,650 | 60 |
| General 4/ | 1,250 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 60 |
| Sub-total | 19,500 | 40,950 | 52,200 | 59,150 | 59,150 | 59,150 | 59,150 | 59,150 | 59,150 | 59,150 | 59,150 | |
| Repairs: | | | | | | | | | | | | |
| Repairs to machinery (@10% of value excl. tractor and pick-up) | 3,870 | 4,850 | 7,950 | 9,750 | 9,750 | 9,750 | 9,750 | 9,750 | 9,750 | 9,750 | 9,750 | 60 |
| Pick-up fuel and repairs @-/50 mile | - | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 60 |
| Repairs to fixed equipment/buildings @ 5% of value | 1,500 | 2,410 | 3,570 | 6,095 | 6,095 | 6,095 | 6,095 | 6,095 | 6,095 | 6,095 | 6,095 | 30 |
| Miscellaneous, clerk, water, etc. | 9,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 5 |
| Sub-total | 14,370 | 22,260 | 26,520 | 30,845 | 30,845 | 30,845 | 30,845 | 30,845 | 30,845 | 30,845 | 30,845 | |
| Labor: 5/ | | | | | | | | | | | | |
| Wheat 6/ | 2,900 | 7,100 | 9,100 | 9,100 | 9,100 | 9,100 | 9,100 | 9,100 | 9,100 | 9,100 | 9,100 | |
| Maize 7/ | 3,800 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | 8,170 | |
| Dairy and ley establishment 8/ | 1,920 | 5,760 | 8,544 | 9,120 | 9,984 | 10,368 | 11,136 | 11,712 | 12,480 | 13,440 | 13,440 | |
| Steers 9/ | 198 | 144 | 162 | 864 | 1,026 | 540 | 540 | - | - | - | - | |
| General 10/ | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | 5,400 | |
| Sub-total | 15,218 | 26,574 | 31,382 | 33,518 | 33,680 | 33,578 | 34,346 | 34,382 | 35,150 | 36,110 | 36,110 | |
| Labor with wage increases: 11/ | 15,218 | 26,574 | 34,520 | 43,573 | 43,784 | 43,649 | 44,648 | 44,696 | 45,695 | 46,943 | 46,943 | |
| Management Costs | 4,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | |
| Total Fixed Costs | 53,088 | 113,784 | 137,240 | 157,568 | 157,779 | 157,644 | 158,644 | 158,691 | 159,690 | 160,938 | 160,938 | |

1/ Tractor hours wheat 17 hrs/ha (midway part between CAT and Ministry of Agriculture Survey).

2/ Tractor hours maize 25 hrs/ha.

3/ Tractor hours ley 12 hrs/ha in year 2, 7 1/3 hrs in year 3, 6 hrs thereafter (rounded).

4/ Tractor hrs general (5 hr/ha).

5/ Labor costs per man-day depend on the proportion of skilled labor required for the enterprise.

6/ Wheat labor 1 man-day per ha @ 7/- per man-day

7/ Maize labor 4 1/2 man-days per ha @ 3/- per man-day

8/ Dairy and ley labor 32 man-days per cow @ 3/- per man-day.

9/ Steer labor 6 man-days per head @ 3/- per man-day.

10/ General labor 3 man-days per ha @ 3/- per man-day.

11/ Labor increase allowed 10% for 3 years.

KENYA
GROUP FARMS REHABILITATION PROJECT

Mixed Farm Model: Cash Flow
(Ksh)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11-18 | Year 19-20 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|------------|
| Source of Funds | | | | | | | | | | | | |
| Long-term loans | 84,500 | 121,000 | - | - | - | - | - | - | - | - | - | - |
| Medium-term loans ^{1/} | 101,000 | 84,500 | - | - | - | - | - | - | - | - | - | - |
| Previous-term debt loan | 128,000 | 135,829 | 84,105 | 37,814 | 5,084 | - | - | - | - | - | - | - |
| Overdraft ^{2/} | 107,004 | 411,420 | 499,100 | 523,280 | 528,280 | 537,460 | 549,510 | 556,990 | 536,710 | 559,170 | 559,170 | 559,170 |
| Revenues ^{3/} | 98,462 | 411,420 | 499,100 | 523,280 | 528,280 | 537,460 | 549,510 | 556,990 | 536,710 | 559,170 | 559,170 | 559,170 |
| Total | 297,704 | 724,749 | 583,205 | 561,094 | 533,364 | 537,460 | 549,510 | 526,990 | 536,710 | 559,170 | 559,170 | 559,170 |
| Application of Funds | | | | | | | | | | | | |
| Operating costs (including managers' salary) | 276,244 | 333,770 | 351,871 | 374,588 | 393,049 | 394,994 | 395,434 | 396,661 | 400,030 | 403,348 | 403,348 | 403,348 |
| Capital replacement | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 |
| Existing | - | - | - | - | - | 18,400 | 45,400 | 45,000 | 18,000 | - | 36,160 | 36,160 |
| New machinery | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 | 5,325 |
| Long-term investment | 84,500 | 121,000 | - | - | - | - | - | - | - | - | - | - |
| Medium-term investment | 101,000 | 84,500 | - | - | - | - | - | - | - | - | - | - |
| Repayment previous debt | 128,000 | 84,500 | - | - | - | - | - | - | - | - | - | - |
| Debt service | - | 7,620 | 18,490 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 |
| Long-term ^{4/} | - | 9,090 | 47,690 | 47,690 | 47,690 | 47,690 | 47,690 | 47,690 | 47,690 | 47,690 | 47,690 | 47,690 |
| Medium-term ^{5/} | - | 7,620 | 18,490 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 | 25,486 |
| Overdraft | - | 1,530 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 |
| Principal | - | 1,530 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 |
| Interest ^{6/} | - | 1,530 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 |
| Previous debt loan ^{7/} | - | 1,530 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 |
| Total | 577,994 | 787,949 | 576,005 | 551,494 | 521,364 | 507,079 | 529,135 | 482,272 | 458,641 | 443,959 | 480,119 | 434,633 |
| Annual Surplus/(Deficit) | 2,400 | 4,800 | 7,200 | 9,600 | 12,000 | 30,381 | 20,375 | 44,718 | 78,069 | 115,211 | 79,051 | 104,537 |
| Payment to Members ^{8/} | 2,400 | 4,800 | 7,200 | 9,600 | 12,000 | 14,400 | 19,200 | 24,000 | 48,000 | 72,000 | 72,000 | 96,000 |
| Annual Surplus/(Deficit) after payment to members | - | - | - | - | - | 15,981 | 1,175 | 20,718 | 30,069 | 43,211 | 7,051 | 8,537 |
| Cumulative Surplus/(Deficit) | - | - | - | - | - | 15,981 | 17,156 | 37,874 | 67,943 | 111,154 | 167,562 | 186,056 |

1/ Average outstanding debt for land purchase loans granted through AGC. Loans rescheduled over 30 years.
 2/ For accounting purposes, it is assumed that cereal crops are sold at the beginning of the year following the growing year.
 3/ 15 years repayment following 2 years interest only - interest 9% per annum.
 4/ 7 years repayment - interest 9% per annum.
 5/ Interest @ 9% based on average of 6 to 8 months outstanding.
 6/ Annual bonus in Ksh to each member: Year 1 - 20, Year 2 - 40, Year 3 - 60, Year 4 - 80, Year 5 - 100, Year 6 - 120, Year 7 - 160, Year 8 - 200, Year 9 - 400, Year 10 - 600, Year 11 - 600, Year 19 onwards 800.
 7/ Surplus funds utilized as a reserve to offset fluctuations resulting from purchase of large items of machinery, bad seasons, etc.

KENYAGROUP FARMS REHABILITATION PROJECTVariable Cost Details
(Ksh)

Variable costs are defined as costs which are specific to the enterprise and vary in proportion to the size of the enterprise e.g. for crops: fertilizer, seed, sprays, contract work; for livestock: concentrates, vet and med.

Fixed costs are costs that do not vary with small changes in the size of an enterprise e.g. labor, machinery, general overheads.

1975 Estimates
Cropping Season
(Apr. thru Dec.)

Maize

| | |
|----------------------|-------|
| Variable Costs: Seed | 80 |
| Insecticides | 35 |
| Herbicides | 30 |
| Fertilizer | 940 |
| Miscellaneous | 40 |
| | <hr/> |
| Total variable costs | 1,125 |

Wheat

| | |
|----------------------|-------|
| Variable Costs: Seed | 140 |
| Herbicides | 30 |
| Fertilizer | 510 |
| Contract harvest | 140 |
| Miscellaneous | 20 |
| | <hr/> |
| Total variable costs | 840 |

ForageLey Establishment

| | |
|----------------------------------|-------|
| Variable Costs:- Seed | 160 |
| Fertilizer | 210 |
| Miscellaneous | 10 |
| | <hr/> |
| Total variable costs per hectare | 380 |

KENYA

GROUP FARMS REHABILITATION PROJECT

Variable Cost Details (Cont'd)

1975

Ley Maintenance

Variable costs:
Fertilizer A.S.N. 160 kg

186

Dairy Cows

Variable costs:- Concentrates
Minerals
Vet and Dip
Miscellaneous

130
25
22
3

Total variable costs per head

180

NOTE: Dairy cow variable costs assume good pastures are available. A baler is budgeted for to allow adequate conservation. Pasture and conserved fodder is expected to give 4.56 kg (1 gal.) milk per day. With a 300 day lactation at 1825 kg (400 gal.) and a 15 month calving interval = 1,600 kg (350 gal.) per annum.

Average production = 6.84 kg milk per day of which 4.56 kg (1 gal.) is from grass . . 2.28 kg milk requires concentrates at 1 kg per 3.25 kg milk produced . . 0.71 kg required per cow per milking day.

Concentrates cost .75¢ per kg.

. . per cow per annum concentrate costs.

$$300 \times 0.71 \times 0.7 \times 0.8 = 128.25$$

Say 130

KENYA

GROUP FARMS REHABILITATION PROJECT

Variable Cost Details (Cont'd)

| | <u>1975</u> |
|-------------------------------------|-------------|
| <u>Heifers</u> | |
| Variable costs: Whole milk (115 kg) | 80 |
| Skim milk (500 kg) | 175 |
| Weaner pellets (50 kg) | 52 |
| Calf pencils | 83 |
| Supplement meal (190 kg) | 65 |
| Minerals | 25 |
| Dip and Vet | 90 |
| Miscellaneous | <u>7</u> |
| Total Variable Costs | 577 |

(NOTE: The above costs are for a 3-year period. Average per year is therefore 133/-. The price of skim milk only 6¢ per kg because K.C.C. sell it at this low price to farmers supplying them with whole milk. This will probably not continue unless the volume of milk being produced remains high. A higher skim milk price has therefore been assumed for 1975).

| | |
|-----------------------------|-----------|
| <u>Steers</u> | |
| Variable costs: Dip and Vet | 20 |
| Minerals | 15 |
| Miscellaneous | <u>15</u> |
| Total Variable Costs | 50 |

KENYA

GROUP FARMS REHABILITATION PROJECT

Mixed Farm Model: Crop Costs and Revenues ^{1/}
(Ksh)

Wheat (at 20 bag/ha level)

| | |
|--------------------------|--------------|
| Variable costs (Table 7) | 840 |
| Fixed costs (machinery) | 240 |
| Labor costs | <u>65</u> |
| | 1,145 |
| Gross revenue = | <u>1,990</u> |

Maize

| | |
|--------------------------|--------------|
| Variable costs (Table 7) | 1,125 |
| Fixed costs (machinery) | 320 |
| Labor costs | <u>235</u> |
| | 1,680 |
| Gross revenue = | <u>2,380</u> |

1/ Excluding managerial and overhead costs.

GROUP FARMS REHABILITATION PROJECT

Coffee Estate Model: Yields, Production and Prices

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|--------|---------|---------|---------|--------|--------|
| Yields (kg/ha) | | | | | | |
| Standards 1-5 | 500 | 1,200 | 1,600 | 1,600 | 1,600 | 1,600 |
| Standards 6-10 | 500 | 800 | 400 | 400 | 400 | 400 |
| Total | 1,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Production (Tons) | | | | | | |
| Standards 1-5 | 25 | 60 | 80 | 80 | 80 | 80 |
| Standards 6-10 | 25 | 40 | 20 | 20 | 20 | 20 |
| Total | 50 | 100 | 100 | 100 | 100 | 100 |
| International Price (clean coffee) | | | | | | |
| Guatemalan, spot New York 1/ | | | | | | |
| US\$/lb | 72 | 80 | 72 | 70 | 65 | 65 |
| KE/Ton | 566 | 629 | 566 | 550 | 511 | 511 |
| Kenyan, F.O.B. Mombasa | | | | | | |
| KE/Ton 2/ | 540 | 600 | 540 | 525 | 490 | 490 |
| Ksh/kg | 10.8 | 12.0 | 10.8 | 10.5 | 9.8 | 9.8 |
| Producer Price (Ksh/kg clean coffee) | | | | | | |
| Standards 1-5 | 11.1 | 12.3 | 11.1 | 10.8 | 10.1 | 10.1 |
| Standards 6-10 | 7.0 | 7.8 | 7.0 | 6.8 | 6.4 | 6.4 |
| Gross Value of Production (Ksh'000) | | | | | | |
| Standards 1-5 | 290.0 | 738.0 | 888.0 | 864.0 | 808.0 | 808.0 |
| Standards 6-10 | 182.5 | 312.0 | 140.0 | 136.0 | 128.0 | 128.0 |
| Total | 472.5 | 1,050.0 | 1,028.0 | 1,000.0 | 936.0 | 936.0 |

1/ IBRD Projections, December, 1974.
 2/ 1974 prices based on Kenya Coffee Board's projections. For following years, prices have been adjusted on basis of 1974 ratio.

Coffee Estate Model: Variable and Fixed Costs

| | Unit Price (Ksh) | Number of Units | | Costs (Ksh'000) | | | | | | | | | | | | | Foreign Exchange Component \$ |
|---|-----------------------------|--------------------|------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------------------|
| | | Before Development | Full Development | Before Devel. | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 | Y11 | Y12 | |
| Capital Costs | | | | | | | | | | | | | | | | | |
| Medium Term 1/ | | | | | | | | | | | | | | | | | |
| - Tractor (30 H.P.) | 40,000 | 1 | 2 | | 40.0 | | | | | 35.0 | | | 13.0 | | | 30.0 | |
| - Sprayer | 14,500 | 1 | 2 | | 14.5 | | | | | | | | | | | | |
| - Trailer (30) | 9,000 | | 1 set | | 9.0 | | | | | | | | | | | | |
| - Pick-up | 41,000 | | 2 | | 41.0 | | | | | 38.0 | | | | | | 38.0 | |
| - Replacement of Existing Equipment 2/ | | | Full instal. | | | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 14.0 | 8.0 |
| Total Medium Term | | | | | 8.0 | 112.5 | 8.0 | 8.0 | 8.0 | 8.0 | 75.0 | 8.0 | 8.0 | 21.0 | 8.0 | 82.0 | 8.0 |
| Long Term | | | | | | | | | | | | | | | | 150.0 | |
| - Irrigation Equipment | 3,300/ha | | Full instal. | | 55.5 | 166.0 | | | | | | | | | | | |
| - Coffee Factory and Buildings | 50,000 | | 1 | | 45.0 | | | | | | | | | | | | |
| - Other buildings | | | Full instal. | | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| - Replacement of existing buildings | | | | | 8.0 | 63.3 | 219.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 158.0 |
| Total Long Term | | | | | 8.0 | 63.3 | 219.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 158.0 |
| Variable Costs | | | | | | | | | | | | | | | | | |
| Fertilizers | | | | | | | | | | | | | | | | | |
| A.N.P. (25% N) | 1,210/T | 110 kg/ha | 220 kg/ha | 6.7 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 |
| N.P.K. (18-1/2, 18-1/2, 7-1/2) | 1,530/T | | 200 kg/ha | | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 |
| Muriate | 70/T | | 75/ha | | 24.5 | 24.5 | | | | | | | | | | | |
| Fungicides/Herbicides | | | | | | | | | | | | | | | | | |
| Trifluralin | 29/kg | | 26.4 kg/ha 3/ | | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 | 38.3 |
| Copper Caythoride | 16/kg | | 11 kg/ha 2/ | | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 |
| Delapon | 12.2/kg | | 10 kg/ha | | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 |
| Greenstone | 41.4/l | | 6 l/ha | | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 |
| Sub-total Fertilizers/Fungicides/Herbicides | | | | 6.7 | 138.9 | 138.9 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 | 124.4 |
| Irrigation Variable Costs | 600/ha | | | | | | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| Picking Costs 2/ | 253/T of cherries | 58.8 Tons | 588.2 Tons | 14.9 | 74.4 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 | 148.8 |
| Factory Costs | 800/T of parchment | 11.8 Tons | 117.6 Tons | 9.4 | 47.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 | 94.1 |
| Marketing and Processing Costs | | | | | | | | | | | | | | | | | |
| Wage 3/ | 3.2/bag | 235 bags | 2,353 bags | 0.8 | 4.1 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |
| Transport Charge 2/ | 2.4/bag | 235 bags | 2,353 bags | 0.6 | 2.8 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Levy to K.P.C.U. | 1/4% of total value 8/ | | | 0.2 | 14.2 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 |
| Cess to Rural Council | 1/4% of total value 8/ | | | 0.2 | 3.4 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 |
| Milling Charges-standards 1-5 | 150/T clean coffee | | | 1.8 | 7.5 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 |
| Standards 6-10 | 300/T clean coffee | | | 3.6 | 15.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| Sub-total Marketing and Processing Costs | | | | 6.2 | 33.8 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 | 67.3 |
| Management Costs 2/ | | | | | | | | | | | | | | | | | |
| Manager's Salary | 24,000/year | | | | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| Flat salary | 75/T clean coffee | | | | 3.8 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Production bonus | | | | | | | | | | | | | | | | | |
| Consultant's Remuneration | 28.0 | | | | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 |
| Flat charge | 1,040/ha | | | | 7.1 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 |
| Proportional charge | 1-1/4% of gross prod. value | | | | 86.9 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 | 97.3 |
| Sub-total Management Costs | | | | | 119.8 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 |
| Total Variable Costs | | | | 37.5 | 180.5 | 342.2 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 | 320.1 |
| Fixed Costs | | | | | | | | | | | | | | | | | |
| Wages and Salaries | | | | | | | | | | | | | | | | | |
| Field Supervisor | 7,500/year | 1 | 1 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Factory Foreman | 4,000/year | 1 | 1 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Mechanic | 5,000/year | 1 | 1 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Driver | 2,500/year | 1 | 1 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Clerk | 3,000/year | 1 | 1 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Workers | 1,600/year | 25 | 35 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Other Salary Benefits | 15% of annual salary | | | 9.3 | 9.3 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 |
| Sub-total Wages and Salaries | | | | 71.3 | 71.3 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 | 89.7 |
| Operation and Maintenance Costs | | | | | | | | | | | | | | | | | |
| Factor 12/ | | | | 15.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| Pick-up 12/ | | | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Other Farm Machinery 13/ | | | | | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| Drying Tables, Factory Buildings 14/ | | | | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Irrigation Equipment 15/ | | | | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 |
| Overheads | 70/ha | | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Sub-total Operation and Maintenance | | | | 15.2 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 | 43.7 |
| Total Fixed Costs | | | | 86.5 | 115.0 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 | 133.4 |
| TOTAL COSTS | | | | 143.3 | 655.3 | 939.6 | 718.7 | 718.4 | 718.4 | 710.3 | 777.3 | 710.3 | 710.3 | 723.3 | 710.3 | 791.3 | 860.3 |

1/ Life period of equipment - tractor, pick-up: 5 years
- sprayer: 8 years
- others: 10 years.

2/ Based on depreciation cost of existing equipment.

3/ 25 c sprays.
4/ Ksh 165 per ton of wet cherries for actual picking costs (Ksh 1.50 per debbie) plus Ksh 68 per ton of wet cherries for pickers' transportation costs (Ksh 0.80 per debbie). This assumes that 1,000 kg of wet cherries produce 200 kg of parchment, which, in turn, produces 170 kg of clean coffee and that 250 debbies of wet cherries correspond to one ton of parchment.

5/ 50 kg bags of parchment.
6/ Ksh 0.05 per bag per mile for an average of 30 miles.
7/ K.P.C.U.: Kenya Producer Cooperative Union. Levy and cess calculated on basis of gross value of production (see table).

8/ East African Acceptances Limited management agreement figures.
9/ All managerial expenditures are kept beyond year 7, for group ownership requires high management standards.

10/ Average of 1,200 hours per year at Ksh 18.3/hour.

11/ Average of 10,000 miles/year at Ksh 0.50/mile.

12/ Annual cost of 10% of initial investment cost.

13/ Annual cost of 5% of initial investment cost.

January 24, 1975

KENYA
GROUP FARMS REHABILITATION PROJECT
Coffee Estate Model: Cash Flow
(Ksh' 000)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13-16 | Year 17 | Thereafter |
|---------------------------------------|--------|---------|---------|---------|---------|---------|---------|--------|--------|---------|---------|---------|------------|---------|------------|
| Source of Funds | | | | | | | | | | | | | | | |
| Long-term loans | 55.5 | 211.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Medium-term loans | 104.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Previous debts loan | 300.0 | 737.9 | 565.0 | 398.9 | 246.5 | 214.6 | 110.0 | 20.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 |
| Floating overdraft | 426.1 | 472.5 | 1,090.0 | 1,028.0 | 1,000.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 |
| Revenues ^{1/} | 86.4 | | | | | | | | | | | | | | |
| | 972.5 | 1,421.4 | 1,614.0 | 1,426.9 | 1,246.5 | 1,150.6 | 1,046.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 | 936.0 |
| Total | | | | | | | | | | | | | | | |
| Application of Funds | | | | | | | | | | | | | | | |
| Operating Expenses | 380.5 | 549.2 | 550.3 | 549.0 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 | 545.9 |
| - variable costs | 115.0 | 133.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 | 148.4 |
| - fixed costs | | | | | | | | | | | | | | | |
| Capital Replacements | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| - existing machinery | | | | | | | | | | | | | | | |
| - new machinery | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| - buildings | | | | | | | | | | | | | | | |
| Long-term investment | 55.5 | 211.0 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| medium-term investment | 104.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Debt service | 300.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Repayment previous debt (Year 1) | | | | | | | | | | | | | | | |
| - long-term (15y - 9%) | 5.6 | 5.6 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 |
| - medium-term (7y - 9%) | 9.5 | 9.5 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |
| - floating overdraft | | | | | | | | | | | | | | | |
| - capital ^{2/} | 426.1 | 426.1 | 737.9 | 564.0 | 398.9 | 246.5 | 214.6 | 110.0 | 20.0 | - | - | - | - | - | - |
| - interest ^{3/} | 36.5 | 36.5 | 63.7 | 46.3 | 34.6 | 19.1 | 9.4 | 10.0 | 1.6 | - | - | - | - | - | - |
| - Previous debts loan (15y) | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 | 32.2 |
| - Taxation | | | | | | | | | | | | | | | |
| | 971.5 | 1,419.5 | 1,608.2 | 1,415.6 | 1,235.7 | 1,134.8 | 1,026.2 | 933.1 | 873.3 | 900.7 | 911.2 | 910.2 | 860.7 | 803.5 | 806.0 |
| Total | | | | | | | | | | | | | | | |
| Surplus paid to members ^{4/} | 1.0 | 1.9 | 5.8 | 11.3 | 10.8 | 15.8 | 19.8 | 42.9 | 62.7 | 35.3 | 24.8 | 25.8 | 75.3 | 132.5 | 130.0 |

- 1/ For accounting purposes, it is assumed that coffee is sold at the beginning of the year following the growing year.
 2/ A one year lag is assumed between the time overdraft money is drawn and the time it is repaid.
 3/ Annual rate charged by East African Acceptances. Interest is charged for 9-10 months each year because most inputs have to be available early in the growing season.
 4/ Increasing from Ksh 20 per member (average of 50 members per estate) in Year 1 to about Ksh 400 per member in Year 7 and equal to net revenues thereafter. No reserves were assumed accumulated as additional cash required to meet unforeseen fluctuations could be easily covered by overdraft.

KENYA

GROUP FARMS REHABILITATION PROJECT

Financial Rates of Return on Model Farms

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11-19 | Year 20 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|---------------------|
| <u>Mixed Farms</u> | | | | | | | | | | | | |
| Incremental Production | 46.3 | 283.4 | 371.1 | 395.3 | 400.3 | 409.5 | 421.3 | 399.0 | 408.7 | 431.2 | 431.2 | 611.2 ^{1/} |
| Incremental Operating Costs (142.4) | (219.7) | (219.7) | (237.7) | (260.5) | (279.0) | (280.8) | (281.3) | (282.5) | (285.9) | (289.2) | (289.2) | (289.2) |
| Capital Investments (185.5) | (205.5) | (205.5) | - | - | - | (18.4) | (45.4) | (45.0) | (18.0) | (36.2) | (36.2) | (36.2) |
| Net Incremental Flow (281.6) | (141.8) | (141.8) | 133.4 | 134.8 | 121.3 | 110.3 | 94.6 | 71.5 | 104.8 | 142.0 | 105.8 | 285.8 |
| Financial Rate of Return | | | | | | | | | | | | |
| | | | | | | | | | | | | 24% |
| <u>Coffee Estates</u> | | | | | | | | | | | | |
| Incremental Production | - | 386.1 | 963.6 | 941.6 | 913.6 | 849.6 | 849.6 | 849.6 | 849.6 | 849.6 | 849.6 | 849.6 |
| Incremental Operating Cost (368.2) | (555.3) | (555.3) | (571.4) | (570.1) | (567.0) | (567.0) | (567.0) | (567.0) | (567.0) | (567.0) | (567.0) | (567.0) |
| Capital Investments (160.0) | (211.0) | (211.0) | - | - | - | (67.0) | - | - | (13.0) | - | (30.0) | (30.0) |
| Financial Rate of Return | | | | | | | | | | | | |
| | | | | | | | | | | | | 30% |

^{1/} Includes value of herd in year 20

February 14, 1975

KENYA
GROUP FARM REHABILITATION PROJECT

| | Project Cost (Ksh.'000) | | | | | | | | | | | |
|---|----------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|
| | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | | Total | |
| | Total | F.E. | Total | F.E. | Total | F.E. | Total | F.E. | Total | F.E. | | |
| A. ON FARM INVESTMENTS | | | | | | | | | | | | |
| Mixed Farms (90) | 1,414 | 1,244 | 3,657 | 3,217 | 5,184 | 4,562 | 4,837 | 4,837 | 2,562 | 2,255 | 18,315 | 16,115 |
| Machinery and Equipment | 7 | 1 | 137 | 27 | 213 | 42 | 55 | 55 | 225 | 45 | 685 | 170 |
| Buildings | 84 | 49 | 356 | 206 | 526 | 304 | 355 | 355 | 400 | 232 | 1,980 | 1,145 |
| Fencing Piping and Land Clearing | 1,092 | | 2,808 | | 3,978 | | 4,212 | 4,212 | 1,950 | | 114,040 | |
| Livestock | 2,119 | 1,060 | 3,179 | 1,590 | 4,238 | 2,118 | 1,854 | 1,854 | 1,150 | | 13,244 | 6,222 |
| Incremental Working Capital | 4,716 | 2,354 | 10,137 | 5,040 | 14,139 | 7,026 | 7,101 | 7,101 | 5,137 | 2,532 | 48,434 | 24,053 |
| Sub-Total | | | | | | | | | | | | |
| Coffee Estates(36) | 941 | 725 | 2,435 | 1,875 | 2,435 | 1,875 | 1,875 | 1,875 | 1,494 | 1,150 | 9,740 | 7,500 |
| Machinery and Equipment | 500 | 185 | 905 | 335 | 905 | 335 | 335 | 335 | 405 | 150 | 3,620 | 1,340 |
| Buildings | 4,061 | 1,186 | 7,079 | 1,968 | 7,079 | 1,968 | 1,968 | 1,968 | 3,018 | 784 | 28,316 | 7,874 |
| Incremental Working Capital | 5,502 | 2,096 | 10,419 | 4,178 | 10,419 | 4,178 | 4,178 | 4,178 | 19,054 | 4,616 | 43,676 | 16,714 |
| Sub-Total | 10,218 | 4,450 | 20,556 | 9,218 | 24,558 | 11,204 | 11,279 | 11,279 | 19,054 | 4,616 | 90,110 | 40,767 |
| Total On-Farm Investments | | | | | | | | | | | | |
| B. PROJECT ADMINISTRATION AND TECHNICAL SERVICES | | | | | | | | | | | | |
| APC Headquarters | 1,650 | 615 | 1,820 | 680 | 1,630 | 608 | 608 | 608 | 1,630 | 608 | 8,360 | 3,119 |
| Ministry of Agriculture | 362 | 28 | 362 | 28 | 362 | 28 | 28 | 28 | 362 | 27 | 1,810 | 139 |
| Resident Manager's Training | 220 | - | 395 | - | 550 | - | - | - | - | - | 1,165 | - |
| Large Farm Sector Study | 220 | 177 | 220 | 177 | 67 | 54 | 54 | 54 | 67 | 23 | 641 | 515 |
| Total (B) | 2,452 | 820 | 2,797 | 885 | 2,609 | 690 | 690 | 690 | 2,059 | 688 | 11,976 | 3,773 |
| Total Base Cost | 12,670 | 5,270 | 23,353 | 10,103 | 27,167 | 11,804 | 11,969 | 11,969 | 12,113 | 5,304 | 102,086 | 44,540 |
| Physical Contingencies(10%) | 1,269 | 527 | 2,335 | 1,010 | 2,717 | 1,189 | 1,197 | 1,197 | 1,211 | 527 | 10,210 | 4,450 |
| Sub-Total | 13,939 | 5,797 | 25,688 | 11,113 | 29,884 | 13,093 | 13,166 | 13,166 | 13,324 | 5,831 | 112,296 | 48,990 |
| Price Contingencies (12% p.a) | 2,231 | 928 | 7,700 | 3,331 | 13,590 | 5,950 | 8,290 | 8,290 | 11,423 | 4,871 | 53,494 | 23,370 |
| Total Project Costs | 16,170 | 6,725 | 33,388 | 14,444 | 43,474 | 19,043 | 21,456 | 21,456 | 24,747 | 10,702 | 165,790 | 72,360 |

GROUP FARMS REHABILITATION PROJECT

Summary of Staffing Requirements and Costs
(Ksh. '000)

| | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | | Foreign Exchange Component % |
|---|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|------------------------------|
| | Number | Costs | |
| GROUP FARM SECTION AGRICULTURAL FINANCE CORPORATION | | | | | | | | | | | |
| Project Manager ^{3/} | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 90 |
| Deputy Project Manager | - | - | 1 | 70 | 1 | 70 | 1 | 70 | 1 | 70 | - |
| Accountant ^{1/} | 1 | 50 | 1 | 50 | 1 | 50 | 1 | 50 | 1 | 50 | - |
| Systems Consultant | 1 | 120 | 1 | 120 | - | - | - | - | - | - | - |
| Bookkeeper | 1 | 30 | 2 | 60 | 2 | 60 | 2 | 60 | 2 | 60 | - |
| Secretarial Staff | 1 | 20 | 2 | 40 | 2 | 40 | 2 | 40 | 2 | 40 | - |
| Clerks | 4 | 48 | 4 | 48 | 4 | 48 | 4 | 48 | 4 | 48 | - |
| Group Managers ^{3/} | 4 | 320 | 4 | 320 | 4 | 320 | 4 | 320 | 4 | 320 | 90 |
| Group Managers (under training) | - | - | 2 | 100 | 2 | 100 | 2 | 100 | 2 | 100 | - |
| Travelling Expenses | | | | | | | | | | | |
| Senior Staff @ Ksh 24,000 (incl. Ksh 12,000 ^{1/}) | 7 | 168 | 8 | 192 | 7 | 168 | 7 | 168 | 7 | 168 | 80 |
| Other Staff @ Ksh 4,000 plus Ksh 20,000 training | 6 | 44 | 8 | 52 | 8 | 52 | 8 | 52 | 8 | 52 | - |
| House Allowance for Senior Staff @ Ksh 40,000 | 7 | 280 | 8 | 320 | 8 | 280 | 7 | 280 | 7 | 280 | - |
| House Allowance for Junior Staff @ Ksh 6,000 | 6 | 36 | 8 | 48 | 8 | 48 | 8 | 48 | 8 | 48 | - |
| Furniture @ Ksh 20,000 on Appointment for Senior Staff | 7 | 140 | - | - | - | - | - | - | - | - | - |
| Medical Allowance @ Ksh 2,000 | 13 | 26 | 16 | 32 | 15 | 30 | 15 | 30 | 15 | 30 | - |
| Office Expenses | - | 2,658 | - | 268 | - | 268 | - | 268 | - | 268 | - |
| Sub-Total: | | 1,650 | | 1,820 | | 1,630 | | 1,630 | | 1,630 | |
| Resident Farm Managers (under training) | 44 | 220 | 79 | 395 | 110 | 550 | - | - | - | - | - |
| Sub-Total: | | 540 | | 1,195 | | 1,990 | | 2,000 | | 2,000 | |
| MINISTRY OF AGRICULTURE | | | | | | | | | | | |
| Headquarters, L & FM Coordinator | 1 | 70 | 1 | 70 | 1 | 70 | 1 | 70 | 1 | 70 | - |
| Rift Valley, Regional L & FM Officer (Training) | 1 | 70 | 1 | 70 | 1 | 70 | 1 | 70 | 1 | 70 | - |
| 3 Districts, L & FM Officers ^{2/} | 3 | 162 | 3 | 162 | 3 | 162 | 3 | 162 | 3 | 162 | - |
| Travelling Expenses @ Ksh 12,000 each (Ministry supplying vehicles) | 5 | 60 | 5 | 60 | 5 | 60 | 5 | 60 | 5 | 60 | 50 |
| Sub-Total: | | 362 | | 362 | | 362 | | 362 | | 362 | |
| Resident Farm Managers (under training) | 40 | 395 | 100 | 550 | - | - | - | - | - | - | - |
| Total Staff Costing | | 2,232 | | 2,577 | | 2,542 | | 1,992 | | 1,992 | |
| GRAND TOTAL: | | | | | | | | | | | |
| | | | | | | | | | | | |

^{1/} Accountant full cost of lower level or part cost of experienced accountant who would also assist other sections of AFC.
^{2/} 50% added to Ministry salary scale for fringe benefits, rent, etc.
^{3/} Internationally recruited.

KENYA

GROUP FARMS REHABILITATION PROJECTSummary of Project Financing
(Ksh '000)

| | IDA | % | AFC/ Govt. | % | Govt. or Coffee Management Companies | % | Total |
|-------------------------------|---------------|-----------|---------------|-----------|---|----|---------------|
| <u>On-Farm Investments:</u> | | | | | | | |
| Mixed Farms | | | | | | | |
| Long and medium-term | 28,150 | 80 | 7,040 | 20 | - | | 35,190 |
| Incremental working capital | <u>10,595</u> | <u>80</u> | <u>2,649</u> | <u>20</u> | - | | <u>13,244</u> |
| Sub-total | 38,745 | 80 | 9,689 | 20 | - | | 48,434 |
| Coffee Estates | | | | | | | |
| Long and medium-term | 10,690 | 80 | 2,670 | 20 | 21,237 | | 13,360 |
| Incremental working capital | <u>5,663</u> | <u>20</u> | <u>1,416</u> | <u>5</u> | - | 75 | <u>28,316</u> |
| Sub-total | 16,353 | 39 | 4,086 | 10 | 21,237 | 51 | 63,015 |
| <u>Project Administration</u> | | | | | | | |
| Technical Services | | | | | | | |
| AFC | 6,690 | 80 | 1,670 | 20 | - | | 8,360 |
| Ministry of Agriculture | 2,380 | 80 | 595 | 20 | - | | 2,975 |
| Large Farm Sector Study | <u>577</u> | <u>90</u> | <u>64</u> | <u>10</u> | - | | <u>641</u> |
| Sub-total | 9,647 | 81 | 2,329 | 19 | - | | 28,635 |
| Total | 64,745 | | 16,104 | | 21,237 | | 102,086 |
| Physical Contingencies | 6,475 | | 1,610 | | 2,125 | | 10,210 |
| Price Contingencies | <u>35,930</u> | | <u>8,776</u> | | <u>8,788</u> | | <u>53,494</u> |
| Total | 107,150 | 65 | 26,490 | 16 | 32,150 | 19 | 165,790 |
| US\$ Equivalent | 15.0 | | 3.7 | | 4.5 | | 23.2 |

February 7, 1975

KENYA

GROUP FARMS REHABILITATION PROJECT

Estimated Schedule of Disbursements 1/
(US\$'000)

| <u>IDA Fiscal Year and Quarter End</u> | <u>Disbursements</u> | |
|--|----------------------|-------------------|
| | <u>Quarterly</u> | <u>Cumulative</u> |
| <u>Year 1</u> | | |
| September 2/ | - | - |
| December | - | - |
| March | 300 | 300 |
| June | 400 | 700 |
| <u>Year 2</u> | | |
| September | 400 | 1,100 |
| December | 400 | 1,500 |
| March | 600 | 2,100 |
| June | 700 | 2,800 |
| <u>Year 3</u> | | |
| September | 700 | 3,500 |
| December | 700 | 4,200 |
| March | 800 | 5,000 |
| June | 800 | 5,800 |
| <u>Year 4</u> | | |
| September | 900 | 6,700 |
| December | 900 | 7,600 |
| March | 1,000 | 8,600 |
| June | 1,000 | 9,600 |
| <u>Year 5</u> | | |
| September | 1,200 | 10,800 |
| December | 1,200 | 12,000 |
| March | 800 | 12,800 |
| June | 800 | 13,600 |
| <u>Year 6</u> | | |
| September | 600 | 14,200 |
| December | 300 | 14,500 |
| March | 300 | 14,800 |
| June | 200 | 15,000 |

1/ Expected date of signing March 1975.

2/ Expected date of effectiveness.

3/ Expected date of project completion.

November 11, 1974

KENYAGROUP FARMS REHABILITATION RPROJECTMarkets and PricesA. WheatProduction

1. Kenya has failed to reach its original goal of producing sufficient wheat to meet domestic requirements. Annual production has declined sharply from the 1969 peak level of 242,000 tons to 159,000 tons in 1972 and 126,000 tons in 1973. At the same time domestic consumption has increased significantly, reaching a level of about 180,000 tons in 1973. Consequently, in recent years large quantities of wheat have had to be imported, mainly from Australia and the U.S.A.; these imports totalled 64,800 tons in 1972 and 77,000 tons in 1973.
2. The decline in wheat production was the direct result of a reduction in the area under cultivation from 172,000 ha in 1968 to 115,000 ha in 1971 and 87,000 ha in 1973. Estimates of planted acreage during March 1974 were about half of what they had been in the same month last year, and the Wheat Board projects that the total planted wheat area will be only about 74,000 ha in 1974. The reasons underlying this decline are varied:
 - (a) the splitting of a number of the wheat growing mixed farms into small units basically unsuited for commercial wheat production;
 - (b) unattractive producer prices for wheat relative to other crops such as maize, sunflower and dairy in high potential areas;
 - (c) low standards of farm management;
 - (d) high costs and erratic deliveries of inputs (fertilizers, machinery, etc);
 - (e) disruption in production resulting from the transfer of European-owned commercial mixed farms to Africans; and
 - (f) variable contracting machinery services.

In spite of major variations over the years, average yields on a national scale increased significantly from about 1,300 kg/ha to 1,500 kg/ha between 1968 and 1973, largely on account of the use of high yielding varieties, larger inputs of fertilizers and the withdrawal of the marginal producers. It should

be stressed at this stage that in Kenya wheat has traditionally been grown in medium and high potential areas by large scale farmers using modern power equipment. In the future this reliance on large-scale production will continue, as smallholders are not equipped to undertake meaningful wheat production.

3. Domestic wheat consumption has increased at an annual rate of about 20% over the last three years. The Kenya national diet is based primarily on cereals, the most important of which is maize. A gradual shift in consumption patterns has occurred over the past decade as standards of living have risen. This shift, together with occasional maize shortages, has resulted in an increase in demand for wheat, especially in rural areas. Thus, without an increase in wheat production, the gap between domestic supply and demand will continue to widen rapidly, with imports consuming increasingly large amounts of foreign exchange. In 1972 and 1973 foreign exchange outlays for wheat were Ksh 31.7 million and Ksh 71.9 million respectively; the latter represented 1.7% of the country's total import bill in that year. As an added consequence of the increased domestic demand, Kenya was forced to discontinue its traditional wheat exports to Uganda.

Marketing

4. Production and marketing of wheat are controlled by the Wheat Board, a Government statutory body whose role it is to fix producer and consumer prices as well as to control wheat imports and exports. The Kenya Farmers' Association (KFA) is the marketing agent for the Wheat Board and is responsible for storage, grading and transport of the grain to the millers. KFA handles the entire wheat crop with the exception of seed retained for planting and the by-products reserved for stock feed. Both the direct and overhead costs of KFA's operations are financed by the Wheat Board. The Wheat Board has recently improved its storage facilities by building two 20,000 ton capacity wheat silos in Eldoret and Nakuru. Milling is carried out by six privately-owned and operated wheat flour mills, one of which handles about 75% of the country's total marketed production. Storage and milling capacities are satisfactory and are adequate to handle some future expansion.

Prices

5. In view of the continued decline in the area planted to wheat and the fact that producer wheat prices had remained unchanged since 1969, the f.o.b. sender's price per 90 kg bag ^{1/} was raised from Ksh 49 to Ksh 70 in October 1973 and in several steps since then to the current Ksh 100 per bag or Ksh 99 after transport costs. Before 1973, Kenya's wheat prices generally approximated import parity levels. Since then, however, international wheat prices have shot up, reaching Ksh 95/bag (US\$147/ton) in 1973, and there are indications that the average price for 1974 will be about Ksh 120/bag (US\$190/ton) delivered Nairobi. These are approximately the prices which Kenya had to pay for its wheat imports in 1973 and 1974 respectively.

^{1/} Average grade 2-1/2 wheat raked (average for the first 2-1/2 grades).

Future Prospects

6. In spite of the difficulties involved in forecasting the future world grain situation, it is expected that wheat production in Kenya should remain competitive with imports given adequate management and proper inputs. The most recent forecast indicates that international prices of wheat, expressed in 1974 constant terms, will decline steadily to reach a low of Ksh 77 per bag (US\$120/ton) by 1980. Production costs of wheat in Kenya are now estimated at about Ksh 1,200/ha and, at the current producer price of Ksh 100/bag, a farmer would have to obtain a yield of at least 12.5 bags per ha to be able to show a profit. The Project farms are expected to obtain yields of about 20 bags of wheat per ha; this indicates that wheat production should be profitable, and Kenyan wheat should compete favorably with wheat produced by large exporting countries. Also, exports of wheat products to neighboring African countries could be resumed if production were to expand substantially. The annual production target set by the 1974-78 Development Plan is 250,000 tons, a level comparable to that achieved in 1969. Allowing for the currently anticipated rate of growth of consumption of 7% per annum from 1974, Kenya still hopes to be self-sufficient in wheat production by 1978. However, it will be difficult for these annual production targets to be met.

7. A number of Government sponsored wheat development schemes have been tried in the past, particularly in the Masai country. Although success has been limited, the Government is currently launching a new Masai scheme whereby 200,000 ha would be brought under cultivation by 1975/76 with an expected increase in national production by about 43,000 tons. The benefits to be gained from the scheme are uncertain, however, and the rehabilitation of the large mixed farms would be the most efficient way of alleviating the wheat shortage in the country. Incremental production from the Project is expected to reach 16,500 tons, or about 10% of the quantities required by the country to attain self-sufficiency by 1978. This will mean foreign exchange savings of approximately US\$1.3 million per year.

B. Maize

Production

8. Maize is Kenya's staple food and the country's most important crop. Maize statistics are difficult to verify, but it is estimated that the total area under maize now approximates one million ha, with the large-scale farms representing less than 10% of this area. Countrywide, yields are about 8 bags (90 kg each) per ha on average, implying an annual average production of about 0.9 million tons. Production fluctuates widely from year to year, contributing to a variable pattern in the volume marketed, as well as in total imports and exports. Most of the marketed maize is delivered from the main production areas of Uasin Gishu and Trans Nzoia Districts.

9. On average, only about 30% of total maize production is marketed through commercial channels, with the balance being consumed on the farms as

either human or animal feed. Marketed production stagnated at about 230,000 tons in 1970 and 1971, but then increased to 373,000 tons in 1972 and 450,000 tons in 1973. The 1973 record crop was due mainly to exceptionally favorable weather conditions as well as to the increasing use of improved maize and hybrid varieties. ^{1/} While there had been no foreign trading of maize in 1970, 128,000 tons were imported in 1971. The balance shifted in 1972 however. Net exports in that year reached 8,000 tons and then shot up to about 220,000 tons in 1973; in the latter year the total volume exported was equal to the total domestic sales. In spite of these high exports, stocks increased by about 7,000 tons during 1973 to reach 234,000 tons as of January 4, 1974.

Marketing

10. Virtually all maize marketed through commercial channels is handled by the Maize and Produce Board and the Kenya Farmers' Association (KFA). The Maize and Produce Board, which markets a number of other agricultural commodities besides maize, is a Government statutory body responsible for maize marketing, price and international trade policy. The KFA is the Board's marketing agent for the Rift Valley, and handles roughly half of the country's total marketed production. KFA assumes all the direct costs of its marketing operations, but is remunerated by the Board at a rate of about Ksh 1.10/bag. The Maize Board is responsible for marketing in the rest of the country, and this is done through appointed traders who pay the farmers in cash for their crops.

11. During the early part of 1973, the Board was forced to slow intake into its stores as a result of congestion at the receiving depots. This situation eased during the year as a result of the increase in consumption, export sales and the provision of additional storage capacity. In particular, the Board's purchasing, drying and bulk-handling facilities at Nakuru and Kitale (close to the Project farms) were expanded and modernized. The on-going 4-year Development Plan envisages a total of Ksh 12 million to be spent on maize storage facilities.

Prices

12. The producer price of maize has fluctuated markedly over the past six years. The low levels which prevailed before 1968 discouraged production, but after the price was raised during the 1968/69 period, exports of maize had to be heavily subsidized as the international price of the commodity remained below Kenya's domestic price. Consequently, the producer price was reduced around 1970. In 1972, it was raised again so as to encourage production and curb the maize imports which had resumed in 1971. This increase achieved the desired result, and substantial exports were made possible in 1972/73 at an average of Ksh 560/ton. The producer price of maize was again increased from the 1973 price of Ksh 35/bag (Ksh 385/ton) in several steps to reach the current Ksh 65/bag (Ksh 715/ton). Under the present conditions, maize appears

^{1/} In 1972 improved maize covered 300,000 ha, including 210,000 ha of hybrid varieties.

to be fully priced relative to other crops. The recent increases should offset the very substantial increases in fertilizer costs over the past year.

Future Prospects

13. As a result of dry weather conditions, high fertilizer prices, and delays in farmer credit in the producing areas, maize purchases for 1974 are likely to fall below the 1973 level. The Maize and Produce Board estimates 1974 maize purchases at 288,000 tons as compared to 450,000 tons in 1973, a drop of about 36%. However, with the 234,000 tons held in stock at the beginning of 1974, there should be sufficient maize for domestic consumption during 1974. The current 4-year plan places a major emphasis on rapid increases in maize production in order to satisfy a domestic demand which is expected to grow at an annual rate of about 4% until 1978. It is also estimated that gross marketed crop production should increase at a rate of 6.4% annually over the same period. This estimate implies purchases by the Maize and Produce Board of about 650,000 tons annually by 1978 if adequate provision for additional buffer stocks is made (approximately 36,000 tons). Given the currently high maize production costs in Kenya, prospects for exports are limited. In addition, world maize prices are expected to decline in real terms from the current high of Ksh 857/ton (U.S. No. 2, yellow f.o.b. Gulf Ports) to Ksh 643/ton by 1980. Total incremental production from Project farms is expected to reach about 7,500 tons by the end of the current 4-year plan, thus covering about 5% of the additional expected market requirements between 1974 and 1978.

C. Milk

Production

14. Kenya's dairy herd was estimated at 460,000 mature grade cows in 1972. Yields averaged 830 kg per cow for these improved types, compared to only 150 kg for the unimproved zebu females (of which there were about 3.8 million head in 1972). Marketed production expressed in terms of milk equivalent has grown at an average annual rate of 8% over the past four years, and reached 273 million kg in 1972 and 290 million kg in 1973. It is estimated that about 31% of marketed production is supplied by smallholders and the remainder by large-scale farms. Between 1970 and 1973, sales of processed liquid milk grew at 12% per annum, due mainly to an increased proportion of whole milk going to the liquid market; average per capita consumption of milk is now about 80 kg per year. The balance of marketed production consisted of manufactured dairy products such as butter, cheese, ghee and dried milk powder. The Kenya dairy industry has had no problem in supplying sufficient quantities to meet domestic demand, and has also produced sizeable quantities of milk for export - principally to Uganda and Tanzania. Exports of whole milk to these two countries total about 58 million kg annually. In both 1972 and 1973 butter and ghee exports (the only non-liquid dairy products exported in those years) totalled about 1,900 tons, that is almost 40% of total butter production in the country.

Marketing

15. Milk and dairy products are marketed through farm sales, local sales through dairy cooperatives and sales through the Kenya Cooperative Creameries (KCC). An unknown quantity of milk is sold directly from the producer to the consumer, while milk surplus to farm needs is brought to the nearest dairy cooperative, which either sells it on the local market or forwards it to the KCC. Annual local sales by dairy cooperatives total about 1 million kg of milk, and sales to the KCC approximate 90 million kg or 30% of the latter's total intake. The KCC is the main marketing channel for milk and dairy products in Kenya, and it has a near monopoly on the sale of fluid milk in major cities. It has factories in Nairobi, Naivasha, Nakuru, Eldoret, Kitale, Sotik, Kisumu, Thomson's Falls and Kiganjo. Liquid milk is processed mainly at Nairobi, Naivasha, Nakuru and Eldoret, while spray driers operate at Eldoret, Kiganjo and Kitale. Between 1969 and 1973, the intake of whole milk equivalent increased at a rate of about 8% per year, and sales followed a similar trend. In 1972/73, the KCC sold about 120 million kg of fluid milk, representing about 43% of its total intake.

Prices

16. Producer and consumer prices for milk are (as in the case of beef) controlled by Government. Since the abolition of the farmer quota system in 1970, there have been two major changes in producer prices. From July 1970 to July 1971, producer prices reflected KCC's realized market prices. As the proceeds from the sale of fluid milk were higher than those for milk products, and as the proportion of the two changed between the dry and wet seasons, a dry season bonus automatically arose. In July 1971, a constant producer price was set by Presidential Decree; the price was set at Ksh 0.745 (recently increased to Ksh 0.800) per liter for first grade milk, Ksh 0.55 for second grade milk and Ksh 0.22 for low grade milk. In spite of an increase in consumer prices for milk and dairy products which became effective at about the same time, KCC's spread has remained narrow and the Company has been operating at a loss in the last two years: its total cumulated deficit shot up from Ksh 2.6 million in 1971/72 to Ksh 14.4 million in 1972/73. KCC's financial position is therefore precarious and appropriate measures are being reviewed by Government.

Future Prospects

17. The 1974-78 Development Plan estimates that by 1978 the number of mature grade cows in the national dairy herd will have increased to about 625,000 head, with marketed milk production amounting to 410 million kg - a growth rate of 6.8% per annum. Although the smallholders' share in total production is expected to increase quite substantially during the Plan period, milk production on the large-scale farms will still have to be encouraged if production targets are to be met. Total production from the Project's mixed farms is expected to reach about 22.4 million kg annually, that is about 18% of the anticipated increase in marketed milk production between 1974 and 1978.

D. CoffeeProduction

18. Kenya coffee (which is similar in quality to Colombian coffee) is produced both by estates and by smallholders; the relative shares of each in the 1972/73 season were 53% and 47% respectively. Total production reached a record level of 73,800 tons in 1972/73, 25% above the 1971/72 level. This production increase was the result of a number of factors, including (i) the termination of the International Coffee Agreement in February 1973; (ii) the overall improvement in cultural and management standards and a more efficient control over the Coffee Berry Disease which had been a major obstacle to increased production in preceding years; and (iii) the favorable prices of coffee on the international market.

19. The new Development Plan calls for a controlled expansion of the area under coffee as well for raising the yields per ha. Although yields increased through the early 1960's, they began to drop in about 1966 due to attacks from Coffee Berry Disease (CBD). Total area under coffee was about 84,800 ha in 1972/73, 35% of which was in the estate sector and 65% in the smallholder sector. Current trends in the coffee area are not very clear, but there are some indications that the past trend towards a reduction in the estate coffee area is being reversed as estate ownership stabilizes and prices become more attractive. The smallholder coffee area, which was especially affected by CBD, also seems to be expanding after a period of relative recession. Competition from tea and dairying is a factor which may still adversely affect coffee planted areas in some cases.

20. The increase in production between 1971/72 and 1972/73 was mainly due to a major improvement in yields closely linked to the control of Coffee Berry Disease. Average yields were about 900 kg/ha in 1972/73, as compared to 720 kg/ha in the previous year. The main improvement took place in the estate sector where yields averaged 1,320 kg/ha in 1972/73, a 30% increase over 1971/72, partly on account of a more systematic use of irrigation. The yields of about 630 kg/ha obtained in the smallholder sector remained comparatively low, due partly to the difficulties created by the soaring costs of fertilizers, chemicals and manure. In 1972/73, there was also a marked improvement in coffee quality with the proportion of high standard coffee (classes 1-3) increasing by almost 6% of the total mix, as compared with the preceding season. This shift in quality occurred mainly in the smallholder sector.

21. The estates usually pulp and dry their own coffee to the parchment stage before they deliver it to the Kenya Producers' Cooperative Union (KPCU). KPCU is then responsible for the milling and the classification as well as for the delivery of the clean product to the warehouses of the Coffee Board of Kenya which, in turn, proceeds with the auctioning. The KPCU handles about 95% of the coffee produced in the country, with the balance going to the small private mills. KPCU also handles all financial transactions in the name of the planter. Milling

and storage fees are charged at about Ksh 135/ton of clean coffee, while payment charges amount to 1/4% of gross proceeds. Through these marketing arrangements, the estates obtain virtually the world market price according to the quality of their coffee. In the smallholder sector, coffee is processed in factories operated by the cooperatives. From there on, the marketing and pricing system is similar to that available to the estate sector. The main difference between the two is in the actual price secured by the producer. Given the low level of efficiency of the cooperatives, the producer receives a substantially reduced portion of final export proceeds; also, payments from the cooperatives are slow. In light of these factors, the financial incentives to the smallholder remain limited. Additional parchment storage and clean coffee warehousing facilities became available during the 1972/73 season when the KPCU opened a 10,000 ton parchment storage complex.

Markets and Prices

22. Sales by auction totalled 72,600 tons in 1972/73, a substantial increase over the preceding two years when such sales remained close to 60,000 tons. The average price obtained was Ksh 9.2 per kg, as compared to Ksh 8.5 in 1972 and Ksh 7.2/kg in 1971. For the 1973/74 season, an average price of Ksh 10.8/kg is expected. The reasons for these price increases are closely interrelated: (i) the low level of world coffee stocks; and (ii) production continuously lagging behind consumption.
23. World production of coffee has lagged behind consumption continuously since 1966/67, so that stocks have gradually decreased from their peak of over 4.8 million tons in 1965/66 to about one-half of that level as of the end of September 1973. The tight balance between world supply and demand is largely due to the decline in Brazil's coffee production between 1961 and 1972.
24. Since the termination of the International Coffee Agreement, controlled export quotas have been discontinued and a free market situation has ensued for the first time in ten years. In the absence of I.C.O. export controls, the major producers have resolved to maintain a united marketing policy, the main objective being to keep prices at levels such that a fair return can be ascertained in the light of currency fluctuations. For this purpose, they agreed to hold back 10% of their average exports over the last three years from the market, implying a supply shortfall to the consuming countries of 240,000 tons, a quantity comparable to the excess stocks held by these countries.
25. Kenya's foreign exchange earnings from coffee were about Ksh 715 million in 1972/73, and represented about 33% of the country's total exports. Kenya exports went to over thirty different countries and, as had been the case in previous years, West Germany, Holland, Sweden and the United Kingdom together purchased an aggregate share of 70% of the country's total coffee exports. A small quantity of 3,900 tons was sold to new markets at a discount price, while only 1,400 tons were consumed locally.

Future Prospects

26. In view of the production and stocks outlook, world coffee prices are likely to remain firm in the years ahead. It is expected that prices in real terms will reach a peak around 1976 and then decline gradually over the last three years of the present decade as the supply situation eases. The market for coffees of a quality comparable to that of Kenya coffee will remain especially favorable. According to the most recent projections, the price of Kenya coffee (f.o.b. Mombasa expressed in 1974 constant terms) is expected to reach Ksh 12.0/kg in 1976, to decline to Ksh 9.8/kg by 1979, and to remain at about that level thereafter. ^{1/} The decrease forecast for the end of the 1970's is in no way comparable to the fall in prices that occurred after the coffee boom of the early fifties; this is due mainly to the increased willingness of producers to forego production increases for the benefit of higher prices. Producer prices are expected to basically follow a similar trend. These prices were calculated on the basis of the Coffee Board's estimates of the 1972/73 prices paid to the planters ^{2/}, as detailed below:

| <u>Standard</u> | <u>Ksh/kg of Clean Coffee</u> | <u>Standard</u> | <u>Ksh/kg of Clean Coffee</u> |
|-----------------|-----------------------------------|-----------------|-----------------------------------|
| 1 | - | 7 | 7.21 |
| 2 | 12.08 | 8 | 6.77 |
| 3 | 11.56 | 9 | 6.13 |
| 4 | 11.09 | 10 | <u>5.50</u> |
| 5 | 10.93 | | Aver. <u>7.00</u> |
| 6 | 10.30 | | |
| | Aver. <u>11.12</u> | | Overall Aver. <u>10.88</u> |

27. Kenya's 1974/78 Development Plan provides for an increase in total coffee production and therefore exports to 70,000 tons by 1978. As suggested by the above 1972/73 statistics, this target has already been overshot. It should be born in mind, however, that 1972/73 was an exceptional year and that the 1973/74 crop has been forecast at 64,800 tons by the International Coffee Organization. The additional production expected from the Project would be 3,240 tons per year at full development (1979). This would roughly represent 5% of both actual total production achieved in 1972/73 and targetted production for 1978. Since Kenya produced about 1.6% of total world production (estimated at 4.37 million tons) in 1972/73

^{1/} These prices are based on IBRD projections for Guatemalan coffee with appropriate adjustments for quality, marketing conditions and transport costs.

^{2/} Include marketing and processing costs.

and contributed about 2.1% of total world exports (estimated at 3.36 million tons), the impact of the Project on world coffee prices would be negligible.

28. Kenya's current Development Plan emphasizes increased yields from the existing coffee area. The main progress will be achieved in the small-scale sector, for current yields are particularly low in that sector. As far as the large-scale sector is concerned, drastic improvements can be achieved on a number of run-down estates. With good management, rapid increases in production can be expected, thus taking full advantage of the good coffee prices which are likely to prevail over the coming years. The Project at full development would boost estate production by about 9% of the 39,000 tons reached in 1972/73.

February 10, 1975

KENYA

GROUP FARMS REHABILITATION PROJECTAnnual Incremental Project Production
(Ksh '000)Wheat (Year 7)

$$\begin{aligned} \text{Improved Wheat} &= \frac{90 \text{ farms} \times 140 \text{ ha each} \times 20 \text{ bags/ha} \times 90 \text{ kg/bag}}{1,000 \text{ kg in a ton}} \\ &= 22,680 \text{ tons} \end{aligned}$$

$$\begin{aligned} \text{Previous Production} &= \frac{90 \text{ farms} \times 50 \text{ ha each} \times 15 \text{ bags/ha} \times 90 \text{ kg/bag}}{1,000 \text{ kg in a ton}} \\ &= 6,075 \text{ tons} \end{aligned}$$

$$\text{Incremental Wheat Production} = \underline{16,605 \text{ tons}}$$

Maize (Year 7)

$$\begin{aligned} \text{Improved Maize} &= \frac{90 \text{ farms} \times 37 \text{ ha each} \times 37.5 \text{ bags/ha} \times 90 \text{ kg/bag}}{1,000 \text{ kg in a ton}} \\ &= 11,240 \text{ tons} \end{aligned}$$

$$\begin{aligned} \text{Previous Production} &= \frac{90 \text{ farms} \times 20 \text{ ha each} \times 23 \text{ bags/ha} \times 90 \text{ kg bag}}{1,000 \text{ kg in a ton}} \\ &= 3,730 \text{ tons} \end{aligned}$$

$$\text{Incremental Maize Production} = \underline{7,510 \text{ tons}}$$

Milk (Year 10)

$$\begin{aligned} \text{Improved Production} &= \frac{90 \text{ farms} \times 140 \text{ cows} \times 1,500 \text{ kg/annum}}{1,000 \text{ kg in a ton}} \\ &= 18,900 \text{ tons} \end{aligned}$$

$$\begin{aligned} \text{Previous Production} &= \frac{90 \text{ farms} \times 20 \text{ cows} \times 750 \text{ kg/annum}}{1,000 \text{ kg in a ton}} = 1,350 \text{ tons} \end{aligned}$$

$$\text{Incremental Milk Production} = \underline{17,550 \text{ tons}}$$

Coffee (Year 3)

$$\begin{aligned} \text{Improved Production} &= \frac{36 \text{ farms} \times 50 \text{ ha each} \times 2,000 \text{ kg}}{1,000 \text{ kg}} \\ &= 3,600 \text{ tons} \end{aligned}$$

$$\begin{aligned} \text{Previous Production} &= \frac{36 \text{ farms} \times 50 \text{ ha each} \times 200 \text{ kg}}{1,000 \text{ kg}} \\ &= 360 \text{ tons} \end{aligned}$$

$$\text{Incremental coffee Production} = \underline{3,240 \text{ tons}}$$

KENYA
GROUP FARMS REHABILITATION PROJECT

Government Cash Flow From Project 1/
(Ksh'000)

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|---------|---------|---------|----------|----------|----------|----------|---------|---------|---------|---------|
| CASH INFLOW: | | | | | | | | | | | |
| From IDA/IBRD for project financing | 10,298 | 21,137 | 27,674 | 31,032 | 16,932 | 107,093 | 7,587 | 7,456 | 7,325 | 7,193 | 7,062 |
| From AFC for debt service 2/ | 161 | 665 | 1,472 | 6,777 | 7,448 | 19,370 | 1,475 | 1,600 | 1,776 | 2,308 | 3,066 |
| Taxi (Fuel and Income) | 430 | 820 | 1,160 | 1,410 | 1,450 | 5,270 | | | | | |
| Total Cash Inflow | 10,889 | 22,642 | 30,306 | 39,219 | 25,830 | 128,886 | 9,062 | 9,056 | 9,101 | 9,501 | 10,122 |
| CASH OUTFLOW: | | | | | | | | | | | |
| To AFC for: | | | | | | | | | | | |
| - Project on-lending | 8,714 | 20,409 | 28,471 | 32,834 | 14,973 | 105,401 | - | - | - | - | - |
| - Additional staff costs | 2,662 | 4,096 | 5,452 | 6,054 | 6,718 | 24,982 | - | - | - | - | - |
| - Large farm sector study | 269 | 298 | 101 | 112 | 123 | 903 | - | - | - | - | - |
| To IDA for debt service 3/ | 39 | 156 | 340 | 402 | 402 | 1,339 | 402 | 402 | 402 | 402 | 402 |
| " IBRD " " " | 267 | 267 | 370 | 1,872 | 3,826 | 6,602 | 5,650 | 5,650 | 5,650 | 5,650 | 5,650 |
| To Ministry of Agriculture for additional staff | 442 | 490 | 544 | 604 | 670 | 2,750 | 670 | 670 | 670 | 670 | 670 |
| Total Cash Outflow | 12,393 | 25,716 | 35,278 | 41,878 | 26,712 | 141,977 | 6,722 | 6,752 | 6,752 | 6,752 | 6,752 |
| ANNUAL SURPLUS/(DEFICIT) | (1,504) | (3,074) | (4,972) | (2,659) | (882) | (13,091) | 2,304 | 2,304 | 2,349 | 2,749 | 3,370 |
| CUMULATIVE SURPLUS/(DEFICIT) 4/ | (1,504) | (4,578) | (9,550) | (12,209) | (13,091) | (13,091) | (10,751) | (8,447) | (6,098) | (3,349) | 21 |

1/ Including contingencies.
 2/ Loan repayable over 30 years including 3 years grace period @ 3% p.a. on amounts outstanding.
 3/ 3/4 of 1% service charge on amount disbursed and outstanding; credit repayable over 40 years after 10 years grace period. Loan at 8 1/2% repayable over 20 years following 5 years grace period.
 4/ The cash flow will continue to show a surplus up to the end of year 30 due to AFC's accelerated loan repayments relative to Government's debt service to IDA, which would continue to year 50. The cumulative surplus over the 30 year period would amount to about Ksh 85 million.

KENYAGROUP FARMS REHABILITATION PROJECTEconomic Analysis

Economic rates of return for the project have been calculated separately for the mixed farms and coffee estates and for the project as a whole (Annex 10, Table 1). The following assumptions have been made:

- (a) farm-gate benefits from wheat, maize and coffee have been adjusted to reflect international price forecasts;
- (b) coffee benefits are deferred one year because payments to the Coffee Board are usually delayed beyond the production year;
- (c) to reflect more fully the benefits of foreign exchange to Kenya, benefits from coffee and wheat are shadow-priced at Ksh 10 to the US\$ as all coffee is exported while wheat production is considered import substitution;
- (d) the foreign exchange component of costs was shadow-priced at Ksh 10 to the US\$;
- (e) taxes on fuel estimated at 30% of value total fuel cost have been deducted. Other import duties and sales taxes are either non-existent or negligible;
- (f) 20% of project headquarters cost are allocated to the coffee section. The remaining 80% as well as the resident managers and Ministry of Agriculture costs are allocated to the mixed farms;
- (g) unskilled labor on the mixed farms is shadow-priced at 50% to reflect the estimated underemployment of group owners and other labor in that area. Labor on coffee farms was not shadow-priced because labor for coffee estates is largely seasonal and local labor is fairly fully utilized at the busy periods;
- (h) all other benefits and costs were calculated at market value;
- (i) rates of return were also calculated without shadow-pricing, i.e. with foreign exchange at Ksh 7.14 per US\$ and with all labor costed at actual wage prices;
- (j) a series of sensitivity analysis showing the effect of reduced and increased benefits and increased costs were calculated (Annex 10, Table 3).

KENYA
GROUP FARMS REHABILITATION PROJECT

Economic Analysis 1/
(Ksh '000)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13-20 |
|-------------------------------|----------|----------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Coffee Estates | | | | | | | | | | | | | |
| Incremental Benefits (Coffee) | - | 4,670 | 17,001 | 28,870 | 40,382 | 46,222 | 44,785 | 43,626 | 42,820 | 42,820 | 42,820 | 42,820 | 42,820 |
| Incremental Costs | 5,566 | 12,809 | 17,914 | 23,088 | 22,968 | 21,761 | 21,511 | 21,484 | 20,823 | 20,823 | 21,835 | 22,230 | 22,365 |
| On-farm Investments | 389 | 423 | 386 | 386 | 386 | 68 | 68 | 39 | 2 | 2 | - | - | - |
| Technical Services | | | | | | | | | | | | | |
| Total | 5,995 | 13,232 | 18,300 | 23,394 | 23,354 | 21,829 | 21,579 | 21,323 | 21,648 | 20,823 | 21,835 | 22,230 | 22,365 |
| Incremental Net Cash Flow | (5,995) | (8,562) | (1,299) | 5,476 | 17,028 | 24,393 | 23,206 | 22,103 | 21,172 | 21,997 | 21,965 | 20,590 | 20,455 |
| Rate of Return - 54.0% | | | | | | | | | | | | | |
| Mixed Farms | | | | | | | | | | | | | |
| Incremental Benefits | - | 3,020 | 8,270 | 14,080 | 18,381 | 19,220 | 19,220 | 19,220 | 19,220 | 19,220 | 19,220 | 19,220 | 19,220 |
| Wheat | 1,533 | 5,489 | 11,110 | 16,427 | 18,731 | 18,162 | 17,892 | 18,256 | 18,888 | 18,878 | 19,098 | 20,088 | 20,719 |
| Other (Waste, Milk, Meat) | | | | | | | | | | | | | |
| Total | 1,533 | 8,509 | 19,380 | 30,507 | 37,111 | 37,382 | 37,115 | 37,476 | 38,108 | 38,098 | 38,388 | 39,308 | 39,939 |
| Incremental Costs | 6,037 | 15,874 | 23,683 | 29,668 | 24,700 | 21,337 | 24,140 | 25,917 | 27,230 | 26,420 | 25,100 | 25,250 | 27,200 |
| On-farm Investments | 1,878 | 2,043 | 1,864 | 1,864 | 1,864 | 1,864 | 1,664 | 1,464 | 1,264 | 1,064 | 864 | 664 | - |
| Technical Services | | | | | | | | | | | | | |
| Total | 7,915 | 17,917 | 25,547 | 31,532 | 26,564 | 23,201 | 26,104 | 27,381 | 28,794 | 27,484 | 25,964 | 25,914 | 27,200 |
| Incremental Net Cash Flow | (6,482) | (9,408) | (6,167) | (1,025) | 10,547 | 14,181 | 11,011 | 10,095 | 9,344 | 10,614 | 12,394 | 13,394 | 12,739 |
| Rate of Return - 29% | | | | | | | | | | | | | |
| Total Project | | | | | | | | | | | | | |
| Incremental Benefits | 1,533 | 13,179 | 36,381 | 59,377 | 77,493 | 83,604 | 81,900 | 81,102 | 80,296 | 80,918 | 81,208 | 82,128 | 82,759 |
| Incremental Costs | 13,870 | 31,442 | 43,847 | 54,964 | 49,918 | 45,020 | 47,693 | 48,904 | 50,112 | 49,461 | 47,792 | 48,114 | 49,262 |
| Incremental Net Cash Flow | (12,337) | (17,970) | (7,466) | 4,451 | 27,575 | 38,574 | 34,217 | 32,198 | 29,894 | 31,457 | 33,409 | 33,984 | 33,194 |
| Rate of Return - 42% | | | | | | | | | | | | | |

1/ Basis of calculations given in text of Annex.

KENYA

GROUP FARMS REHABILITATION PROJECT

Economic Rate of Return

Derivation of Commodity Prices Used in the Economic Analysis

| | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 80-82 | 1983 and thereafter |
|---|------|---------------------|--------------------|--------|--------|--------|--------|--------|--------|---------------------|
| WHEAT: Canadian Western Red Spring | | | | | | | | | | |
| <u>14% in Store Thunder Bay 1/</u> | | | | | | | | | | |
| Current (US\$/T) | 71 | 147 | 210 | | | | | | | |
| (Ksh/T) | 507 | 1,050 | 1,499 | | | | | | | |
| Constant 1974 prices (US\$/T) | 98 | 168 | 210 | 200 | 180 | 162 | 145 | 130 | 125 | 125 |
| (Ksh/T) | 700 | 1,200 | 1,500 | 1,430 | 1,285 | 1,155 | 1,035 | 930 | 893 | 893 |
| Kenya Wheat (locally produced or imported) | | | | | | | | | | |
| Producer Price (current Ksh/T) | | 777 | 1,000 | 1,110 | | | | | | |
| Import Price (current Ksh/T) 2/ | 489 | 933 | n.a. | | | | | | | |
| Import Parity Price (1974 Ksh/T) 3/ | | 1,065 ^{4/} | 1,330 | 1,490 | 1,350 | 1,210 | 1,080 | 960 | 940 | 940 |
| Adjusted Producer Price (1974 Ksh/T) 5/6/ | | 955 | 1,220 | 1,380 | 1,240 | 1,100 | 970 | 840 | 820 | 820 |
| MAIZE: U.S. No. 2, Yellow f.o.b. Gulf Ports 1/ | | | | | | | | | | |
| Current (US\$/T) | 56 | 98 | 120 | | | | | | | |
| (Ksh/T) | 400 | 700 | 857 | | | | | | | |
| Constant 1974 prices (US\$/T) | 77 | 112 | 120 | 125 | 112 | 105 | 100 | 95 | 90 | 93 |
| (Ksh/T) | 550 | 800 | 857 | 893 | 800 | 750 | 714 | 678 | 643 | 664 |
| Kenya Maize | | | | | | | | | | |
| Producer Price (current Ksh/T) | | 444 | 555 | 722 | | | | | | |
| Export Price (current Ksh/T) 2/ | | 560 | n.a. | | | | | | | |
| Export Parity Price (1974 Ksh/T) 1/ | | 640 ^{4/} | 686 | 760 | 680 | 640 | 607 | 576 | 547 | 564 |
| Adjusted Producer Price (1974 Ksh/T) 5/6/ | | 530 | 576 | 650 | 570 | 530 | 497 | 466 | 437 | 454 |
| COFFEE: International Price (clean coffee) | | | | | | | | | | |
| Guatemalan, spot New York 8/ | | | | | | | | | | |
| US\$/lb | | | 72 | 72 | 80 | 72 | 70 | 65 | 65 | 65 |
| Ksh/Ton | | | 11,320 | 11,320 | 12,600 | 11,320 | 11,000 | 10,220 | 10,220 | 10,220 |
| Kenyan, F.O.B. Mombasa | | | 10,800 | 10,800 | 12,000 | 10,800 | 10,500 | 9,800 | 9,800 | 9,800 |
| Ksh/Kg | | | 10.8 | 10.8 | 12.0 | 10.8 | 10.5 | 9.8 | 9.8 | 9.8 |
| Adjusted Producer Price (Ksh/kg clean coffee) 5/6/ | | | | | | | | | | |
| Standards 1-5 | | | 11.1 ^{7/} | 11.6 | 12.3 | 11.1 | 10.8 | 10.1 | 10.1 | 10.1 |
| Standards 6-10 | | | 7.0 ^{7/} | 7.3 | 7.8 | 7.0 | 6.8 | 6.4 | 6.4 | 6.4 |

1/ IBRD Projections (April 8, 1974). Prices for 1972 and 1973 are actual.

2/ East African Customs and Excise - 1973 Annual Trade Report.

3/ Calculated on basis of previous ratios $\frac{\text{Kenya Import Parity Price in ct. 1974 prices} = 1,260}{1,200} = 1.05$

4/ Obtained from current 1973 export price by applying annual inflation rates of 14% between 1973 and 1974.

5/ Net of Handling, Transportation and Administrative charges, expressed in 1974 constant prices.

6/ Used in Economic Analysis.

7/ International value of Kenyan maize if made available on the free market - calculated on basis of previous ratios:

 $\frac{\text{Kenya Maize Export Price (1974 prices)} = 680}{800} = 0.85$

U.S. Yellow (ct. 1974 prices)

8/ 1974 prices are based on Kenya Coffee Board's projections. For following years, prices have been adjusted on basis of 1974 ratio.

KENYAGROUP FARMS REHABILITATION PROJECTEconomic Rate of Return
Sensitivity Analysis (%)COFFEE ESTATES

| | | | |
|-----------------------------|--------------------------------|-----------|----------|
| | <u>Benefits:</u> as calculated | minus 10% | plus 10% |
| <u>Costs:</u> as calculated | 54 | 44 | 65 |
| | plus 10% | | |
| | 45 | | |
| | minus 10% | | |
| | 62 | | |

MIXED FARMS

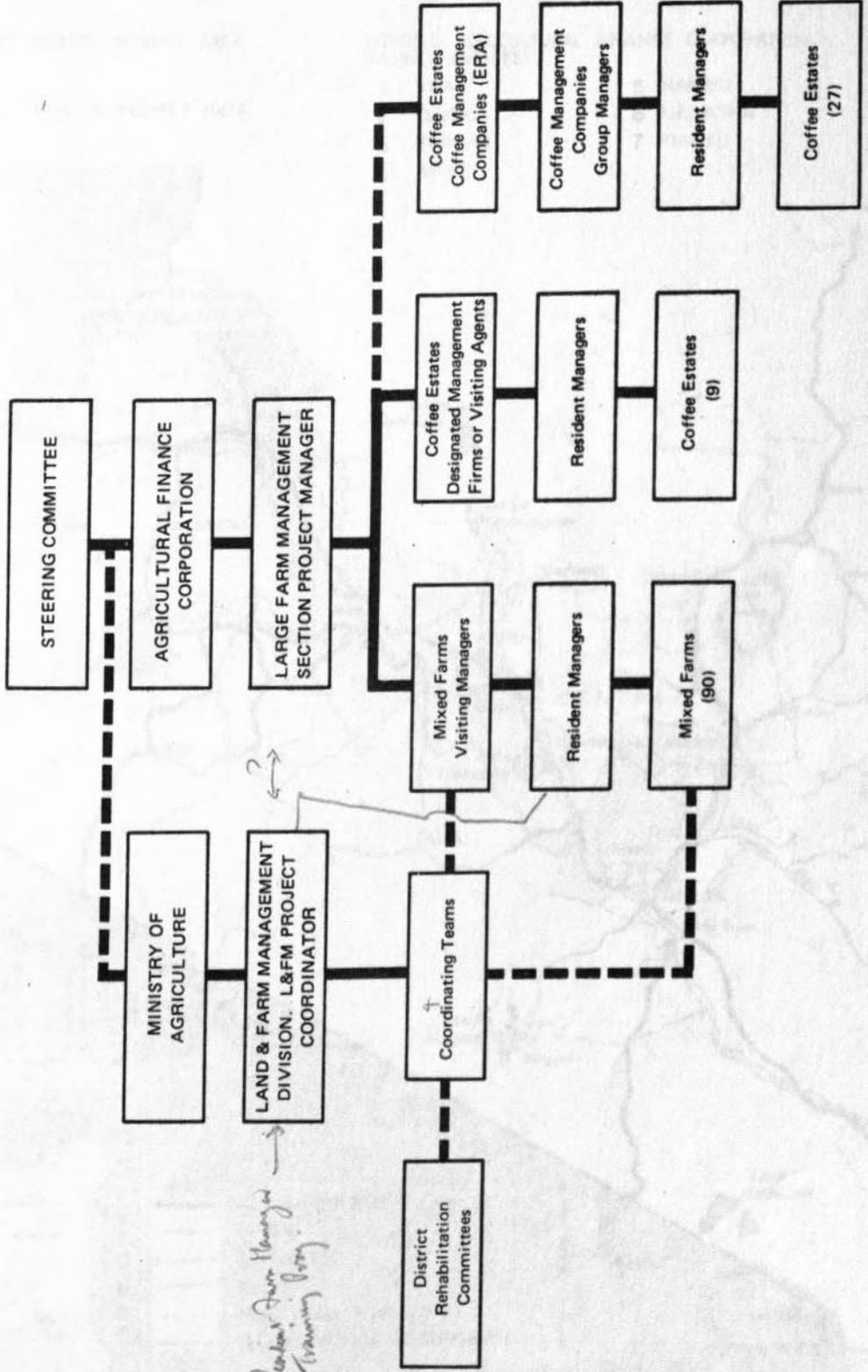
| | | | |
|-----------------------------|--------------------------------|-----------|----------|
| | <u>Benefits:</u> as calculated | minus 10% | plus 10% |
| <u>Costs:</u> as calculated | 29 | 19 | 41 |
| | plus 10% | | |
| | 20 | | |
| | minus 10% | | |
| | 41 | | |

TOTAL PROJECT

| | | | |
|-----------------------------|--------------------------------|-----------|----------|
| | <u>Benefits:</u> as calculated | minus 10% | plus 10% |
| <u>Costs:</u> as calculated | 42 | 31 | 52 |
| | plus 10% | | |
| | 32 | | |
| | minus 10% | | |
| | 50 | | |

February 7, 1975

KENYA
 GROUP FARMS REHABILITATION PROJECT
 PROJECT ORGANIZATION CHART



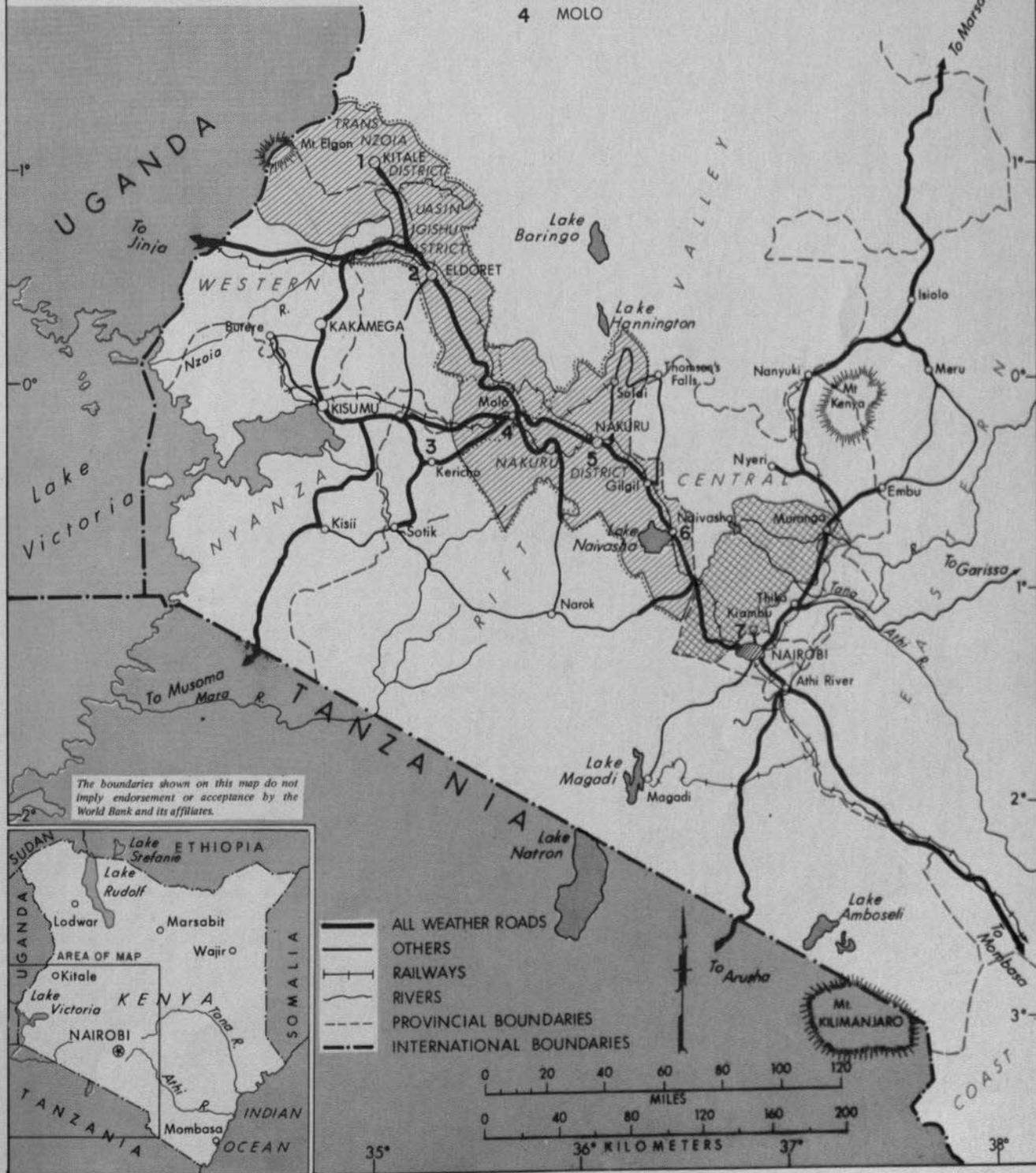
KENYA

GROUP FARMS REHABILITATION MIXED FARMING AND COFFEE PROJECT AREAS

-  COFFEE ESTATES PROJECT AREA
-  MIXED FARMING PROJECT AREA

EXISTING AGRICULTURAL FINANCE CORPORATION
DISTRICT OFFICES:

- | | |
|-----------|------------|
| 1 KITALE | 5 NAKURU |
| 2 ELDORET | 6 NAIVASHA |
| 3 KERICHO | 7 KIAMBU |
| 4 MOLO | |



The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.

-  ALL WEATHER ROADS
-  OTHERS
-  RAILWAYS
-  RIVERS
-  PROVINCIAL BOUNDARIES
-  INTERNATIONAL BOUNDARIES

