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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

KENYA

REPORT FOR THE DEVELOPMENT OF AFRICAN AGRICULTURE AND ROADS

May 16, 1960

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CURRENCY EQUIVALENTS

£ 1 million	-	U.S.\$2.8 million
20 EA shillings	-	£1 - U.S.\$2.80
100 EA cents	-	1 EA shilling - U.S.14 cents
U.S.\$1	-	7.14 shillings - 714 EA cents
U.S.\$1 million	-	£ 357,143

KENYA
PROJECT FOR THE DEVELOPMENT OF AFRICAN AGRICULTURE

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SUMMARY

i. The Governments of the United Kingdom and of Kenya have asked the Bank for a loan in an amount equivalent to US\$5.6 million to help finance the completion of the so-called Swynnerton Plan of the Kenya Government for the development of African agriculture in "high potential areas" of the territory, and the construction and improvement of roads to serve these areas. The Borrower would be the Government of Kenya and the loan would be guaranteed by the Government of the United Kingdom.

ii. The objectives of the Plan are to avert soil deterioration in African areas, establish communities of settled farmers and improve the standard of living of these farmers. Good progress has been made during earlier years of the Plan towards attaining these objectives and, consequently, the balanced economic development of the country. Expenditures on the development of African "areas of high potential" under the Plan are estimated to reach £6.9 million by June 1960.

iii. The project consists of the execution of a further 3 years of the Plan in African "areas of high potential", together with the construction of one new road and the improvement of 22 roads in these areas. It covers the period July 1, 1960 through June 30, 1963 and the costs are estimated at about £6,020,000 (US\$16,860,000); £4,460,000 on agriculture and £1,560,000 on roads.

iv. The foreign exchange component of the cost of the Project is estimated at about £2,150,000 (US\$6 million) or about 36% of total costs. The proposed Bank loan of £2 million equivalent would cover the bulk of the foreign exchange requirement. The balance of the costs would be met by the Government of Kenya mainly through its development budget.

v. The execution of the Project would be undertaken by five separate Ministries. Although there were in the past no formal arrangements for coordination except at Cabinet level, the Treasury has effectively coordinated the activities of the various agencies dealing with agriculture. However, since there would be added need for close coordination of the road program with the agricultural program, an inter-developmental committee chaired by a representative of the Treasury would assume responsibility for coordination.

vi. The Project is well designed for its purpose of improving farming conditions in the African areas of Kenya. It is technically and economically sound. The success already achieved under the Swynnerton Plan, has amply demonstrated the competence of the Government agencies which would be carrying out the Project. The economic benefits from the Project include an estimated increase in the gross value of agricultural production for export, reaching £6 million per year at the farm level and £7 million per year at export point by 1967. This compares very favorably with the costs of the Project of £6 million and with total expenditures from the inception of the Plan of £12.9 million.

vii. The Project is suitable for a Bank loan of US\$5.6 million equivalent for a term of 10 years, including a grace period of 3-1/2 years.

KENYA

PROJECT FOR THE DEVELOPMENT OF AFRICAN AGRICULTURE

I. INTRODUCTION

1. The Governments of the United Kingdom and of Kenya have requested Bank assistance in financing the development of African agriculture through projects for increasing credit to African farmers and for building and improvement of roads serving African farm areas.
2. A Bank mission visited Kenya in August-September 1959 to evaluate the loan request.
3. In the field, the mission concluded that the satisfactory use of farm credit and transport facilities was dependent on general progress made in the Government's over-all program for the development of African agriculture. Consequently, the mission felt that it would be preferable to consider the possibility of Bank assistance towards implementation of that program as a whole.
4. This report, therefore, is an analysis of a project for the completion, during three years (July 1960 through June 1963), of the Government's over-all program for the development of African agriculture including the building and improvement of roads. The cost of this project would be about £6,020,000, including a foreign exchange component of about £2,150,000.
5. The proposed loan would be US\$5.6 million (£2 million equivalent). The Government of Kenya would be the borrower and the Government of the United Kingdom would be the guarantor.

II. BACKGROUND

6. Kenya (see Map I) has an area of 225,000 square miles and a population estimated in 1959 at 6.45 million, of which 1% were Europeans. There are separate farming areas for the European and the African population.^{1/}
7. Kenya has six provinces administered by provincial commissioners who are appointed by the Governor. The provinces are divided into counties in the European areas and into districts in the African areas, so that the unit of local government is the European County Council or the African District Council. The Councils receive government grants in aid and may levy taxes.

^{1/} This was the situation at the time the mission was in Kenya. The Government intends to open the European areas for qualified African and Asian farmers. The proposed loan would, however, be applied to the development of agriculture in the traditional African areas. Therefore, distinction between European and African farming areas is maintained in this report.

8. There are 25 District Councils of which the District Commissioner, normally an European appointed by the Government, is President and an African is Vice President. Originally, the District Councils merely collected taxes and acted as consultative bodies through which the decisions of the Government might be explained. Recently, a determined effort has been made to delegate to these Councils more responsibility for local affairs. The African District Councils Ordinance of 1950 provided for the delegation of local government functions, such as local health and medical services, education, water supply and roads. As some districts have advanced more than others, there are wide differences in the organization and authority of the Councils.

9. Kenya is basically an agricultural country; industry and mining being of secondary importance. The gross domestic product (including subsistence crops) has been estimated for 1958 at about £207 million. Agriculture contributed about £87 million to this total, manufacturing industries about £20.5 million and mining only about £ 1 million, with government and other services accounting for the remainder. The total value of exports has been about £29 million, of which agricultural products account for over 80% (about £23.5 million).

10. Although Kenya straddles the equator, great variations in elevation create wide differences in climatic conditions, which range from temperate to tropical. Agriculture is largely concentrated along the coast and in a triangle of the country S. W. of Mount Kenya. The northeastern half of the country is desert or semi-desert and an area of 120,000 square miles, mainly in the Northern Frontier Province, is of little use for agriculture.

11. Year-round cropping is possible in most of the agricultural areas of Kenya. Rainfall varies very much with altitude, ranging from 20 inches in the S. E. plains to 40 inches in the more important agricultural areas, and up to 80 inches and more in the higher reaches. The areas with more than 25 inches of rain and an altitude of more than 4000 feet, are generally known as the "areas of high potential".

12. European and African agriculture are geographically separated and areas of high potential are fairly evenly distributed between the two. European agriculture occupies about 13,000 square miles (8.3 million acres) around Nairobi and between Mount Kenya and Mount Elgon (bordering Uganda).

13. There are about 3300 European farms, half of which are larger than 1000 acres. They include 425,000 acres of plantations (mainly sisal, pyrethrum, coffee and tea) and 620,000 acres of cereals (mainly maize and wheat); most of the remainder is natural grazing land. Cattle are kept both for dairying and for beef production. The value of gross domestic product of European agriculture was estimated at £25 million for 1958, or about 30% of the total contribution of agriculture.

14. African agriculture occupies 52,190 square miles (33.4 million acres) on various reserves, located in the S. W. of the country.

15. The African population has been increasing at $1\frac{1}{2}\%$ per annum (total 5 million in 1946 and about 6.1 million in 1959). Most of the African population lives on the reserves, with 2 million concentrated in Central Province and another 2 million in Nyanza, the most densely populated province of Kenya.

16. There are no general statistics available on the production of African farms. Most of the arable land is used for such crops as maize, millets and cassava, but the production of cash crops like pyrethrum, coffee, tea, and cotton is increasing (see table in para. 34). Many African farmers, especially those in the drier areas, concentrate on cattle grazing. They own about 6 million head of cattle. The value of domestic product of African agriculture was estimated at £39 million for 1957. The value of marketed produce is put at £6.8 million, and non-marketed produce at £32 million.

17. African agriculture contributes considerable, though widely varying, quantities of products to export (maize, potatoes, pulses, cotton, wattle bark and extract, hides and skins, and lately coffee, tea and pyrethrum). The value of these exports amounts to about £4 million per year, or one-sixth of total agricultural exports.

III. GOVERNMENT MEASURES FOR THE DEVELOPMENT OF AFRICAN AGRICULTURE

18. The Government became aware, before World War II, that the African farm population would not be able to keep up with the general development of the country unless it received considerable technical and financial assistance. The prevailing system of land tenure was tribal. Under it, the chief allocated an area to the head of a family, which was then allowed to use it until soil fertility diminished, when the family asked for another area. Livestock roamed over extensive communal pasture, for which no individual had any responsibility. In densely populated parts of the country, a serious deterioration of agricultural land occurred.

19. Little could be done while this tribal system of land tenure prevailed. However, a spontaneous trend towards permanent land tenure by individuals began in the higher areas of Nyanza Province. Consequently, government services were organized to help Africans to farm better, to take care of their health and to develop handicrafts. A beginning was made in connecting African market places with the general transport system of the country.

20. In 1945, the various development efforts for the country were welded into a 10-year plan. This plan covered the period 1946-1955, and included all forms of development work. Under this plan, about £5.5 million was spent on the development of agriculture in the African areas. During this period, the Government not only supported but actively promoted a change in the land tenure system, involving the establishment of permanent individual land rights in Central Province and some other areas.

21. By 1954, however, the Government came to the conclusion that a still greater effort would be required. The then Deputy Director of Agriculture, Mr. Swynnerton, formulated a plan for the intensified development of African

agriculture. This plan was put into effect in 1955 and is generally referred to as the Swynnerton Plan. It originally covered the 5-year period 1955-60, and expenditures were originally estimated at £8,550,000 for the period. These expenditures were to be made over and above already established government expenditures for agriculture.

22. Actual expenditures under the Swynnerton Plan totalled £7 million up to June 1959, and further expenditure of £1.5 million is contemplated for the fiscal year ending June 30, 1960. Thus, expenditures on the plan as originally conceived should be very close to the original estimates. During 1957-58, activities under the plan were increased and supplementary sums were budgeted under the title of the Accelerated Swynnerton Plan for the years 1957-58 through 1959-60. The total expenditures under the original and accelerated Swynnerton Plans are expected to amount to £11.1 million by June 1960, of which £6.9 million would be for the areas of high potential.

23. Because of the success of the Swynnerton Plan operations so far, the Government of Kenya has decided to extend these operations for another three years. Estimates for the period 1960-63 have not been completed for all areas but only for the areas of high potential where they amount to £4.46 million.

24. Total expenditures under the Swynnerton Plan in the areas of high potential, therefore, will be about £11.36. These expenditures are for special work and they are over and above normal government expenditures for agriculture.

The Swynnerton Plan

25. The Swynnerton Plan operations are mainly conducted in four of the six provinces of Kenya: Central Province, Nyanza, Rift Valley, and Southern Province. The bulk of the action is concentrated on "areas of high potential" and most of these areas are located in Central Province and Nyanza. Activity under the plan in Coast Province and Northern Province is minor.

26. The Swynnerton Plan consists basically of five operations:

- a) The establishment of individual responsibility for a plot of land. In Nyanza Province, this has been largely consolidation of a spontaneous trend. Farmers there have been urged to demarcate the boundaries of their land clearly, after which maps have been made on the basis of aerial photography and papers have been issued giving a farmer a perpetual right to use a specific plot of land.^{1/} In other areas, particularly Central Province, it has been necessary to initiate a process of land allocation. This includes: aerial photography of the

^{1/} The legal basis for this work is the Native Lands Registration Ordinance, 1959, and the Land Control (Native Lands) Ordinance, 1959.

initial situation; registration of existing land rights; re-allocation of land rights so that each farmer will have a one or two piece farm of economic size; physical demarcation of new boundaries (hedges or fences); aerial photography of the new situation; registration of the new land rights; and finally, the issue of legal papers.

The target of the plan is to create 600,000 consolidated farms, averaging about 10 acres and, therefore, covering about 6 million acres. By the end of 1958, about 70,000 farms on 729,000 acres had been consolidated. Some 5.3 million acres remain to be dealt with but much preparatory work has already been completed for this area. Actual land-assignments will proceed much more rapidly than in the past.

The land allocation has been virtually completed in the Kiambu and Nyeri districts of Central Province. In two other districts, it is making good progress but it has been retarded in one district because of the lack of cooperation of local chiefs. In Nyanza Province, rapid progress has been made in three districts where 12,600 fenced holdings have been established. The work is progressing steadily in two districts of Rift Valley Province.

Because of the density of the population, most of the farms do not include more than 6 to 15 acres. It is, however, possible for a family to reach a reasonable standard of living on this area because of the good quality of the soil and favorable climatic conditions.

- b) Assisting farmers in organizing their farms and bringing them to full production. In some hilly areas, this involves soil conservation work first and may include the establishment of protective forests. In all areas it involves very intensive educational work^{1/} supported by financial assistance (farm loans). In order to perform this work properly, experimental fields and demonstration farms have been established; farm training centers (boarding schools for farmers and their wives) have been organized; the staff of the extension service has been expanded and trained; and a system of supervised farm credit has been established.
- c) Assisting farmers to commence the production of cash crops. Nurseries for coffee and tea and seed farms for pyrethrum and cotton have been established. Farmers have been taught how to take care of the new crops, and supervised farm credit has been

^{1/} The Agricultural Ordinance, 1955, gives the Government powers eventually to enforce good land-use practices, and it gives the legal basis for the various committees and boards involved in the action.

provided. Most farms develop one acre of one of these crops in 2 or 3 years.

- d) Assisting farmers to improve animal husbandry. This includes building up a small herd of milk cattle in the areas of high rainfall, or improving their herd of beef cattle in the dry ranching areas. This has required the establishment of breeding stations, and also the improvement of water supplies. In the high rainfall areas, the farmers have been urged to cover their houses with a corrugated iron roof and to catch the runoff in a small tank; in other areas, dams have been built, ponds dug, or wells drilled.
- e) The establishment of marketing facilities to enable the farmers to sell their increased production properly and profitably. This has been done by the organization of cooperative societies, which sometimes have had to operate processing plants (for instance, for coffee, tea and pyrethrum). In 1952, the African Livestock Marketing Organization (ALMO) was established to buy cattle in the African areas for sale to the Kenya Meat Commission (KMC) ^{1/}

27. The actual development measures vary from region to region because of great differences in physical characteristics and also because of difference in character of the inhabitants.

28. In the semi-arid areas (outside the "high potential areas") the measures include provision of water supplies, soil conservation and afforestation, introduction of better types of grass and better grazing methods and, where rainfall is sufficient, of better methods of cultivation and cash crops (mostly sisal). Marketing facilities are also established.

29. Within the "areas of high potential", there is also differentiation, because these areas are by no means uniform. Where there is adequate rainfall and a dense population, the emphasis is on the formation of small mixed farms with an intensive cropping scheme including one or two cash crops (coffee, tea, pyrethrum, fruits or vegetables). Livestock are run for the production of milk as well as meat. On the other hand, in the areas with somewhat lower rainfall and sparser population, the emphasis is on introducing better grazing methods and improving dry farming crop production (mainly maize, but also cotton). Of over-all importance for the better use of grazing land is the establishment of watering points all over the area, so that the stock can be spread.

Results of Development Measures

30. The Swynnerton Plan was received at first with suspicion by the Africans. Resistance decreased, however, as more and more farmers discovered the advantages of using the new farming methods, particularly in Central Province after the Mau Mau Emergency ended in 1956.

^{1/} A statutory body operating slaughterhouses and canning and storage plants for the internal market and for export.

31. Because the opportunities for improvement are limited in the semi-arid areas, the results are largely of social nature and may not be fully justified economically.

32. However, in "areas of high potential" where £5.4 million was spent on improving African agriculture over the period 1955-59, the success of the plan can be seen in the countryside. The difference between areas where the plan has been in execution for a few years and undeveloped areas is striking. Where the plan operates, there are well ordered farms, houses with proper water supply systems, fields neatly hedged-in, plowed and terraced along the contour and pastures alternating with arable lands or with fields under tree crops. Alongside, in undeveloped areas, field boundaries are mainly up and down hill, there are no proper pastures but much over-grazing and erosion, inadequate water supplies, poor housing of men and animals and primitive storage of crops.

33. The farmers in the reorganized districts are obviously proud of their work and are keen to make further improvements. The original attitude of distrust is disappearing and, in most areas, farmers and their wives are now eager to cooperate and to follow special courses or to enroll in a school (farm training center). Many of the farmers in these districts now make a cash income of £100 or more per year,^{1/} where they previously had little or none.

34. The area under cash crops has increased as follows:

	<u>1953</u>	<u>1959</u>
	<u>acres</u>	
Coffee	4000	24,669
Tea	35	857
Pyrethrum	1300	5,775
Pineapple	3000	4,588
Sugarcane	200	1,087

35. It takes 3-5 years before coffee and tea shrubs begin to produce so that plantings during the earlier years of the plan are now in production. The value of the 1958 production of cash crops has been estimated at £2.5 million against only £ 1 million for the 1953 crop. The value of produce sold through cooperatives rose from £669,000 in 1956 to £1,500,000 in 1958.

^{1/} Income from cash crops in £ per acre:

	<u>Gross</u>	<u>Cash</u>	<u>Net</u>
		<u>Costs</u>	
Coffee	£ 150	£ 50	£ 100
Tea	£ 110	£ 30	£ 80
Pyrethrum	£ 30	£ 7	£ 23

36. There have also been achievements in livestock production. Improved strains of the hardy indigenous cattle have been bred in Nyanza and Rift Valley Province, and in addition a number of African farmers in Central Province trained in animal husbandry are now able to take care of European type cattle. Great progress had been made in cattle ranching in the Southern territories. The initial aim is not to materially increase the total herd. Increases in some areas will be offset by reductions in other overgrazed regions. It may be possible to increase numbers later on when good pastures have been firmly established. In the meantime, the emphasis is on improvement of quality. This should permit some increase in the percentage of stock slaughtered, and it has already resulted in higher prices. Prices paid by the Kenya Meat Commission in 1958, with comparable figures for 1954, were as follows:

(in shillings per head)

	<u>Direct to Producers</u>		<u>Through ALMO</u>
	<u>European Cattle</u>	<u>African Cattle</u>	<u>African Cattle</u>
1954	397	211	159
1958	426	248	244

Improvement of Roads

37. The success of the Swynnerton Plan, bringing about increases in production and consequent over-all commercial activities, has emphasized the need for improved road communications.

38. At present, a relatively dense net of low class earth roads exists in African areas. Two types of terrain predominate: parallel ridges and rolling country. In the first type, roads are built on ridges with side hill cuts requiring very little or no earthmoving; in the second type, roads are constructed with light cuts and fills.

39. Most of the existing roads have been built through clay soil and are for the most part surfaced with laterite, as sound rock or gravel from borrow pits or rivers are seldom available and their use is considered too expensive. Laterite produces a smooth riding surface in dry weather. However, in wet weather the surface becomes very slippery and often impassable if the clay content is high. There has been a tendency in selecting borrow pits to pay more attention to minimizing the costs of production and haulage of the material rather than to its quality. By exercising closer control over the selection of material, a higher quality laterite could be obtained at somewhat greater cost which would provide a practically all-weather surface.

40. As a result of using low quality laterite, most of the roads are not all-weather and because of heavy rains, intensive maintenance is required to keep roads passable. Secondary and minor roads may be closed during a

rain to protect the riding surface, but as they dry quickly they may be opened a few hours after the rain ceases. Road surfaces quickly erode and in some areas, particularly in the Nyanza Province, some roads have sunk several feet below ground level, often being flooded during heavy rains, and making it almost impossible to maintain them properly. The fair to good condition of the roads under these circumstances indicates that both the Ministry of Works and the local authorities endeavor to carry out their maintenance responsibilities well. Nevertheless, the present system of winding, bumpy roads causes damage to produce in transit and makes transportation slow and costly. Travel-times of field officers of government services are also unnecessarily long.

41. Under these physical conditions, the most important improvements required are: (i) raising the grade above the surrounding country and improving drainage; (ii) improving the vertical and horizontal alignment of selected roads; and (iii) improving surfaces to all-weather standards by surfacing with good quality laterite or other resistant material.

IV. THE PROJECT

42. The project consists of the continuation during the three year period, July 1960 through June 1963, of the special government program for the development of African agriculture in "high potential areas", and the construction and improvement of roads to serve these areas. The two parts of the project would involve expenditures of about £4,460,000 on agricultural development and about £1,560,000 on roads. The total expenditures would thus amount to about £6.02 million (US\$16.86 million), including a foreign exchange component of about £2.15 million (US\$6.02 million).

A. AGRICULTURE

43. The agricultural part of the project is the completion, in the "high potential areas" alone, of the current programs under the Swynnerton Plan.

44. The project would continue activities in the main fields covered by the Swynnerton Plan. Land consolidation and registration of landrights would be virtually completed. The farmers would be assisted in modernizing their farms by an enlarged extension service, schools, demonstration farms and the issue of farm loans. They would also be helped to develop cash crops, to establish small herds of milk cattle, or to improve their beef cattle. Water supplies for farm use would be developed. Cooperatives for marketing and processing would be organized; necessary facilities would be financed in part by loans included in the program.

Costs (Agriculture)

45. The cost of the agricultural part of the project has been estimated at about £4,460,000. This estimate is based on recent experience and is

realistic. Explanatory notes on the items of the estimate below are given in Annex I:

Estimated Expenditure July 1960 through June 1963

	<u>£ '000</u>
1) Land Consolidation	1010
2) Establishment of Protective Forests	120
3) Agricultural Services (education, experiments, extension, soil conservation, farm planning)	1900
4) Livestock Improvement	180
5) Establishment of Water Supplies (surveys, engineering, construction)	150
6) Establishment of Marketing Cooperatives	100
7) Credits to Farmers and Cooperatives	1000
	<hr/>
Total Agricultural Part	4460

46. A sum of £310,000 would be recovered in fees for land consolidation work so that net Government expenditures would be £4,150,000.

47. The execution of the agricultural part of the project would require imported equipment and materials. The various government agencies would have to import additional vehicles, earthmoving equipment (mostly small units), other machinery, instruments and materials. Farmers receiving loans would spend about one third on imported equipment and materials. Over the 3-year period, expenditures on imported goods and materials are estimated at an amount of £1.25 million (US\$3.5 equivalent), or about 28% of the cost of the agricultural part of the project.

Administration and Execution (Agriculture)

48. The execution of the agricultural part of the project would be in the hands of several government agencies, with the Ministries of Agriculture and of African Affairs undertaking the major roles. These agencies have competent staffs and are fully capable of performing their duties.

49. Land Consolidation would be the prime responsibility of the Ministry of African Affairs, in consultation with the Ministry of Agriculture. Most of the actual work would be done by the Survey Department under the Ministry of Education, Labor and Lands.

50. The Registrar of Cooperatives, a part of the Ministry of African Affairs, would have prime responsibility for the organization and guidance of cooperative societies.

51. The provision of water would be the responsibility of the Land Development Board (ALDev), consisting of officials of the Ministries of Agriculture and African Affairs, various private people and representatives of

provinces. It has a small staff and its own budget; its duties are to act as a clearinghouse for ideas on land development, to finance schemes in which more than one department is involved, and to allocate to the various areas the total amount available for farm loans in the budget for the Swynnerton Plan. It has an engineering section and it undertakes certain works, such as water supplies.

52. The Ministry of Forests would be responsible for the establishment of protective forests.

53. The Ministry of Agriculture would have the central role. Its duties include extension work, both for crop and livestock development. The field staff of the Department of Agriculture consists basically of Provincial Agricultural Officers, District Agricultural Officers, assistants and instructors. The Veterinary Department has an analogous, although more centralized, organization. There are Provincial Agricultural Committees under the Chairmanship of the Provincial Commissioner, and similar committees exist at District level. The members of the various departments of the Ministry are represented on the Provincial and District Committees. The extension work is of very high quality, and the success of the Plan so far is largely due to the untiring efforts of the officers of the Ministry of Agriculture.

Sources of Credit to Farmers

54. The provision of credit to African farmers has been largely the responsibility of the Ministry of Agriculture. For this the Ministry has had a special appropriation under the development budget which amounted to £18,000 for 1959-60. In addition, the Ministry has for 1959-60 a special ICA grant of £100,000 for the provision of credit specifically for livestock development, but this is not expected to be repeated. Credit for African farmers has been made available also by a number of the African District Councils, which make special appropriations for this purpose under their budgets. The funds of African District Councils are obtained partly by levying local taxes and partly from the Central Government.

55. The only existing specialized agricultural credit institution is the Land and Agricultural Bank of Kenya. This is a mortgage bank and, since until recently few Africans have had legal title to land and property, its lending has up to now been confined to European farmers.

56. The Agricultural Officers of the Ministry of Agriculture play an important role in the provision of credit to African farmers. The Agricultural Officer reviews the investment needs of the newly established farmer and his need for credit. The Agricultural Officer sends the farmer's loan application to his District Agricultural Committee for approval, adding his endorsement of the request and a character appraisal of the applicant. On approval by the District Agricultural Committee the application is sent to the Ministry of Agriculture, which opens an account for the amount of the loan in the name of the applicant in his Local Post Office Savings Bank. The applicant receives a loan book in which withdrawals and repayments are recorded. Withdrawals are subject to approval by the Agricultural Officer.

Payments are normally made directly from the Post Office Savings Bank to the merchant providing the tools and equipment required by the farmer. The Agricultural Officer acts as loan collector in cases of delinquency or default.

57. Loans made from the funds of the African District Councils go through the same procedure. The District Agricultural Committees act in these cases under the title of Joint Loan Boards on behalf of the African District Council concerned. The District Agricultural Committee itself decides whether to act in its own capacity or as a Joint Loan Board, and thus determines from which source the loan to the farmer will be derived. Annex I gives details of loans made to individuals and cooperatives (dealt with in the same manner) during recent years.

58. With the expected progress on development of African farming, the burden of credit operations on Agricultural Officers would increase and would absorb a large amount of their time. Consequently, the Government proposes to strengthen its organization. The Permanent Secretary of the Ministry would be responsible for the credit program, seeking advice of the ALDev Board on policy matters. A senior officer would be in charge of the direct administration and supervision of all loan operations. The Accounts Division of the Ministry would handle all loan accounts and records in its Loan Section.

59. The District agricultural officers would be responsible for authorizing loans within certain limits. They would consult with the District Agricultural Committees. They would also supervise the spending of the loans. If necessary, they would have loan officers on their staffs who would relieve them of administrative work.

60. Gradually, many farmers would become eligible for loans from commercial banks, and from the government owned Land Bank. These institutions would then take over from the Ministry of Agriculture part of its loans, and they would also make new, secured, loans. Some details about the Land Bank are given in Annex I.

61. Estimates of the probable increase in lending to African farmers under the project are given in Annex I.

B. ROADS

62. The road part of the project refers to the construction of one new road and the improvement of 22 roads located in 12 African districts in four provinces. Approximately two thirds of the roads would be strictly of the feeder type connecting production areas and marketing points with the existing main road network, while the remainder would provide both feeder and through service.

63. The work to be done consists mainly of (i) improving horizontal and vertical alignment; (ii) improving the drainage; and (iii) surfacing with good quality laterite or other resistant material.

64. The roads all located in the high potential areas (see Map II) and are listed in Annex III. The total length involved is 564 miles.

65. Two roads would be built to Type I standards and the rest to Type II standards (see Annex II). The standards as a whole are adequate.

66. Single-lane bridges would be built on one secondary road and another road would be surfaced with single-lane light asphalt pavement. Although this practice is not ideal, it is not unreasonable on roads of low traffic density. The Ministry of Works intends to establish laboratory control over the selection of surfacing materials for the roads under the project.

Costs (Roads)

67. The cost of the road part of the project has been estimated by the Road Authority (for details see Annex IV) at £1,560,000 (US\$4.37 million), including a foreign exchange component of £900,000 (US\$2.52 million) which is 58% of total.

68. The cost estimates were prepared on a cost-per-mile basis and appear reasonable when compared to costs of roads recently built to the same standards in similar terrain. Because of the easily handled materials, low labor costs, and efficient organization, unpaved roads of similar design standards to the project roads are built for £500 to £3,000 per mile.

69. The estimate for the foreign exchange component includes expenditures for replacement and additions of equipment, the cost of imported material, fuel and lubricants, and an allowance for instruments and vehicles for engineering and administrative personnel.

Administration and Execution (Roads)

70. A Road Authority was established by statute under the Minister of Works in 1950 and is responsible to him. The Road Authority is responsible for highway development policy and the expenditure of road funds on a network of 25,000 miles of public roads of all classes. The Authority consists of eleven part-time members comprising a Chairman, three Government members representing the Ministries of Agriculture, Finance and Local Government, one nominee of the Minister of Works, and six other members who are residents of standing in the community and represent no sectional interests.

71. The Road Authority derives its revenues from vehicle and drivers' licenses, a petrol consumption tax and government grants. The latter have amounted to approximately £150,000 annually in recent years, and are expected to be raised to about £200,000 in the years to come. The Road Authority budget for 1959-60 is £2.2 million, of which £1.4 million has been allocated for maintenance and other recurring expenditures.

72. Actual maintenance operations and construction work are delegated to the Ministry of Works and to local authorities (County Councils, District Council and Municipalities), the former being responsible for the primary

road system while the local authorities are responsible for secondary, minor and administrative roads in their districts. To control the activities of these agencies, the Road Authority employs a number of inspectors on its permanent staff.

73. Funds are allocated by the Road Authority to the Ministry of Works and the local authorities on a grant basis. In the case of maintenance, grants are established annually by a schedule of rates, based on traffic counts, the length of roads involved, etc.

74. New roads in African districts are usually engineered by the Road Authority inspectors, and the work is inspected from time to time by the same organization. On high cost roads, aerial and field surveys are used to establish preliminary alignments and after adjustments in the field, detailed plans and profiles are prepared based on a balanced use of materials. These roads are then carefully staked in the field. The Road Authority feels that, in general, detailed surveys prior to staking in the field are not warranted on low cost roads (less than £1,200/mile) located in relatively easy terrain where otherwise the engineering costs might amount to as much as a third of the construction cost.

75. Budgetary and cost control systems of the Road Authority, the Ministry of Works, the County Councils and the African District Councils are satisfactory. Adequate provision is made for depreciation of equipment owned by the Ministry and the local authorities by means of renewal funds set aside each year from the current budget. Works and expenditures by the Ministry of Works and local authorities are closely supervised by the Road Authority Inspectorate and auditors of the Ministry for Local Government. The Road Authority and the Ministries of Works and Local Government are staffed with competent personnel.

76. The headquarters and central shops of the Ministry of Works are located in Nairobi. Field offices and shops are located in administrative centers throughout the country. The Ministry operates a well equipped laboratory for materials testing and analysis, and these facilities are available to local authorities. Repair facilities are adequate and well supervised and equipment is used intensively.

77. Africans fill many of the supervisory positions on the staff of the African District Councils, and they are being trained for larger responsibilities by the Road Authority Training School and the Royal Technical College in Nairobi.

78. Some districts have little road equipment and few shop facilities, and even the wealthier districts have only a minimum of equipment and facilities to carry out their maintenance and improvement program. Nevertheless, by using the equipment well and by employing a nucleus of well trained mechanics, operators and road supervisors from the Road Authority Training School, good results are achieved. The Councils may also call on the Ministry of Works for additional equipment and for major repairs of equipment. Where necessary, Council staffs are strengthened by construction and accounting personnel seconded from the Ministries of Works and local Government. These

rents and services are paid for by the Councils out of the Road Authority grants.

79. Final plans for the roads in the project would be prepared by the Ministry of Works. Most of the work would be carried out by direct administration, however some consideration is being given to letting a part of the work to contractors. About two thirds of the roads in the project would be allocated to the Ministry, while the remaining third would be spread among twelve District Councils and two County Councils. Inspection of the work would be the responsibility of the Road Authority Inspectorate.

80. As the Road Authority is empowered to advise and direct the local authorities on any matters pertaining to the execution of the work, full control over work delegated to the African District Councils will be retained by the Authority.

81. Construction and equipment schedules have been prepared by the Road Authority to ascertain equipment needs and timing. They indicate a construction period of three years and that the Ministry would have sufficient equipment capacity after June 1960 to carry out its portion of the work. No new equipment, except for replacement would have to be procured. It would be necessary, however, to expand the existing plant of the African District Councils involved by the purchase of approximately £100,000 of equipment. Small bulldozers, graders and trucks are the main types of construction equipment used by the local authorities.

82. The location and timing of the operations under the road part of the project need to be coordinated with the location and timing of the operations under the agricultural part of the project. For this reason, a closer contact between the road authorities and the agricultural authorities will be worked out. (see also paras. 48 and 87).

C. THE COST OF THE PROJECT AS A WHOLE

83. The cost of the project has been estimated at £6,020,000, distributed as follows:

	<u>Total</u> <u>(£'000)</u>	<u>Foreign Exchange Component</u> <u>(£'000)</u>	<u>% of Total</u>
Agriculture	4,460	1,250	28%
Roads	1,560	900	58%
	<hr/>	<hr/>	<hr/>
Total	6,020	2,150	36%

These cost estimates are based on experience gained during the recent past, and they are realistic.

84. The proposed loan of US\$5.6 million equivalent would cover the bulk of the foreign exchange requirements which are estimated at 36% of the total expenditure for the project.

Financing the Project and Disbursement of Loan

85. The total amount of, roughly, £6 million will be spent at a fairly even rate of about £2 million per year on items included in the project, compared with an estimated expenditure of about £1.5 million in 1958-59 and in 1959-60. Assuming that the proposed loan would be disbursed at a rate of about £650,000 per year, Kenya would have to supply about £1.4 million per year which would be of an order of magnitude the Government has been able recently to finance, over and above its normal budget expenditures, for the development of areas of high potential. Funds have been derived from the Colony's development budget, which includes Colonial Development and Welfare Funds, and partly from loans raised in Kenya and in London.

86. Disbursements of the proceeds of a Bank loan would be as follows:

- a) Agricultural sections of the project: disbursements would be at a rate of 25% of actual total expenditures up to a maximum of £1,100,000 equivalent;
- b) road section of the project: Disbursements would be at a rate of 58% of actual total expenditures up to a maximum of £900,000 equivalent.

Coordination of Operations

87. Four separate Ministries, of which the Ministries of Agriculture and African Affairs and their various agencies have the most important roles, would be concerned with the execution of the agricultural part of the project. A fifth, the Ministry of Works, would be responsible for the closely related roads. Although there have been no formal arrangements for coordination of the over-all program except at Cabinet level, the administration of the agricultural part of the project has worked well in the past because the Treasury has effectively coordinated the activities of the various agencies. The Treasury, through its control over expenditures, has over the past four years ensured that the various parts of the program have been executed as planned, both in respect to timing and location. This coordinating function of the Treasury was greatly assisted by good personal relations between the officers of the Ministries involved in the Swynnerton Plan. In view of the past record, the Treasury can be expected to continue to provide adequate coordination of the agricultural part of the project. Since, however, there will be a need for close coordination of the road program with the agricultural program, the government recently established a coordinating committee with the Permanent Secretary of the Treasury in the chair. The Permanent Secretaries of the various Ministries executing the project are members.

D. JUSTIFICATION OF THE PROJECT

88. The project consists of an integrated series of measures. Each of them taken separately would have little effect; but together, they would produce large benefits. On the one hand, the construction of roads, as such, would add little to the economy if no additional measures were taken to develop agriculture in the areas traversed by the roads. On the other hand, there would be little incentive for the farmers to increase the production of their farms if the roads to markets were not improved.

89. An increase in production for exchange is but one of the goals of the project. The project is designed to give the African farmers a permanent interest in their vocation, to prevent further soil deterioration, to start a process of soil improvement, to increase the production of subsistence farming and finally to produce rapidly a substantial increase in production for the market. All this would contribute to economic and social stability of the rural community of Kenya.

90. The roads would provide potentially rich agricultural areas with improved access to markets and processing plants under all weather conditions. Tea farming in particular needs fast delivery of the year-around harvest to the factory. The production of high-quality coffee also requires a road system which provides reliable transport in the wet season. Since most of the agricultural processing plants are cooperatively owned, the growers would also benefit directly by the reduction in ex-factory transportation costs which would be substantial during the rainy season.

91. With a steady improvement in the standard of living of African farmers, their purchase of goods and services would tend to increase and the improved access to African areas would help to widen the exchange basis of the economy. This should benefit the country as a whole. Better roads, improving communication in general, would permit the farmer to take maximum advantage of the expanding agricultural extension services being provided in the African Districts.

92. A number of the roads would also provide better communication between centers of population and expedite through traffic. None of the roads in the project compete directly with existing railroad lines; in fact, several of the roads would provide better communication to railhead points.

93. The estimates for traffic on the project roads by 1965 range from 40 vehicles per day on feeder roads to 300 on through connection roads.

94. Quantitative estimates have been made of the increase in value of a few of the more clearly definable items of production (see Annex V) which would move on these roads. The sale value of export crops at farm prices is expected to increase by over £4 million. As it takes a few years before the planted crops produce fully, this increase should be achieved by about 1967. The export value of these crops should be over £5 million. To these values should be added the effect of livestock improvements which would be reflected in higher prices for slaughter cattle (see paragraph 36). This would result

in almost £ 1 million more cash for the cattle owners. Moreover, sales of maize, pulses, potatoes, sugarcane, pineapples, milk and small animals (sheep, goats, pigs) would increase. A conservative estimate of the expected increase in sales of all crops and livestock is £6 million per year, with an export value of probably £7 million per year.

95. These figures, which give only a partial indication of the economic benefits of the project, compare very favorably with the costs of the Swynnerton Plan for the "areas of high potential" (about £ 12.9 million), including the costs of the project (about £6 million).

96. Actual cost data of a few modernized African farms indicate that cash expenditures would be less than one third of gross cash income, and that there should be sufficient inducement for farmers to participate in the project.

97. Except for the fees collected for land consolidation work, the government would receive little direct revenues from the project. However, the effect on general tax revenues would be considerable. In recent years, total tax revenues have accounted for about a fifth of the value of Kenya's gross domestic product recorded in the monetary economy (disregarding the value of subsistence production). On this basis, the increase in cash sales resulting from the project (£6 million) would produce an increase in tax revenues of £1.2 million per year. This estimate does not take into account tax revenues from further processing and trading in farm products. An increase in tax revenues of £1.2 million would compare favorably with the sum of government expenditures to be made on the project. (about £6 million).

V. CONCLUSIONS AND RECOMMENDATIONS

98. The project is well designed for its purpose of improving farming conditions in the African areas of Kenya. It is technically and economically sound. The successes already achieved under the Swynnerton Plan, of which the project is an extension, have amply demonstrated the competence of the administration and the technical agricultural services to carry out the project. The economic benefits from the project would be large in comparison with the costs, and the project would make a substantial contribution towards the improvement of the standard of living of the Africans.

99. The project is suitable for a Bank loan to the Government of Kenya of US\$5.6 million equivalent. A term of 10 years, including a period of grace of 3½ years, would seem appropriate.

Explanatory Notes to Items
of Agricultural Cost Estimate

The various items of the cost estimate include expenditures for the following actions or operations:

- 1) Land Consolidation - Surveys for land consolidation (in part by aerial photograph), some surveys for farm planning, and the collection of data about the original land tenure situation (called: fragment-gathering); including in this category are the costs of consolidation and demarcation of scattered holdings. The estimates include expenditures for staff, buildings, vehicles instruments and materials.

The total area of African reserves is approximately 33.5 million acres. About half of this, or 16 million acres, is included in the areas of high potential (excluding the coastal strip). The target is to create 600,000 consolidated farms of an average of 10 acres on an area of 6 million acres. By the end of 1958, 729,000 acres had been consolidated, comprising about 70,000 farms. The balance, or 5.3 million acres, remains to be dealt with but much preparatory work has already been completed for this area. Actual land assignments would proceed at a much more rapid rate than in the past.

- 2) Protective Forests - Preservation of natural resources by establishing forests on a number of slopes to protect them from further erosion. Some of these plantations will gradually be converted into producing forests.
- 3) Agricultural Services - The costs of a series of services to help the farmer to adopt better farming practices. Eighty-five percent of the costs will be for advisory, demonstration and educational services, and for farm surveys in connection with soil conservation work or with farm planning. The balance of 15% will cover the costs of central office services and research work.
- 4) Livestock Improvement - Breeding improved cattle for distribution to farmers. Costs involved are mainly on breeding stations and holding areas. The costs of an artificial insemination service also are included.
- 5) Water Supplies - Payments for the services of the ALDEV organization for design and building water supply systems for individual farms or for groups of farms, especially for those which have improved cattle.

- 6) Establishment of Co-operatives - The service of the Registrar of Co-operatives helps farmers to organize co-operatives for the processing and marketing of their cash crops. The costs of staff, vehicles, buildings and materials are included in this item.
- 7) Credits to Farmers and Co-operatives - Credit to African farmers has been provided by the Ministry of Agriculture and some of the African District Councils. The amounts of loans extended by these agencies since 1948 have been as follows:

From:	<u>Ministry of Agriculture</u>		<u>African District Councils</u>	<u>T o t a l</u>
	(£)		(£)	(£)
	<u>To Farmers</u>	<u>To Cooperatives</u>		
1948-mid 1954	15,600	6,700		22,300
1954-55	3,650	5,500		9,150
1955-56	14,100	53,500		67,600
1956-57	22,600	69,600	10,000	102,200
1957-58	8,750	30,500	32,500	71,750
1958-59	8,250	19,100	22,500	49,850
Total	72,950	184,900	65,000	322,850
Amts. Outstanding on June 30, 1959	45,560 ^{1/}	159,175 ^{2/}	21,800 ^{3/}	226,535

- 1/ Amount of loans in arrears 5.4% of total.
 2/ Amount of loans in arrears 0.07% of total.
 3/ Amount of loans in arrears nil

The provision of credit to African farmers under the project is expected to increase in the following manner:

<u>Estimated Amounts of New Loans</u>		
<u>(in £'000)</u>		
	<u>To Individuals</u>	<u>To Cooperatives</u>
Average for 1957/58 and 1958/59	35	25
1960/61	185	86
1961/62	255	85
1962/63	305	85
	745	256

A typical loan to an individual is £ 100. Lending in 1960/61 amounting to £ 185,000 would include about 1,850 individual loans, which would seem a large number as compared with the volume of past years. However, the Ministry of African Affairs estimates that there will be, at the completion of the program, 60,000 farmers in Central Province alone who will be eligible for a loan.

With this prospective increase in farm credit, the Government realizes that it is necessary to strengthen the Loan Administration Section of the Ministry of Agriculture.

In the long run, many African farmers will be eligible for loans from commercial banks, and especially from the Government-owned Land Bank. This bank has been in operation since 1931 as the Land and Agricultural Bank. Subscribed capital (supplied by Government) is about £ 2 million, and loans outstanding about £ 3 million. The bank accepts deposits and makes a small profit. This bank makes mortgage loans only and since few Africans (until the execution of the consolidation work) had title to their land, almost all loans have been made to European farmers.

The Land and Agricultural Bank of Kenya

(in £'000)

<u>Volume of Business</u>	<u>Amt. of Loans Made</u>	<u>Amt. of Loans Outstanding</u>
1954	348	1,603
1955	454	1,927
1956	498	2,287
1957	730	2,846
1958	272	2,489

Condensed Balance Sheet at December 31, 1958

(in £'000)

<u>Assets</u>		<u>Liabilities</u>	
Mortgage loans ^{1/}	2,990	Capital ^{2/}	1,750
Miscellaneous	124	Due banks	175
		Deposits	940
		Miscellaneous	48
		Reserves	188
		Profit to Reserves	13
Total	<u>3,114</u>	Total	<u>3,114</u>

^{1/} Interest charged to European farmers: 6½% to 7%

^{2/} Interest payable to Government: 4%

(Recently a sum of £ 250,000 was added to capital at 5.64%).

K E N Y ADESIGN STANDARDSFeeder Road Program

	<u>Type 1</u>		<u>Type 2</u>	
	<u>Rolling</u>	<u>Mountainous</u>	<u>Rolling</u>	<u>Mountainous</u>
Design speed (mph)	50	40	50	30
Maximum gradient (percent)	5	7	7	8.3
Minimum radius (feet)	1,500	750	1,000	400
Minimum sight distance (non-passing, feet)	350	275	350	200
Minimum sight distance (passing - feet)	1,400	900	1,400	500
Pavement widths (feet)	20	20	18	18
Minimum shoulder widths in cuts (feet)	5	5	4	4
Minimum shoulder widths in fills (feet)	7	7	4	4

Super elevation	8.5% maximum
Surface crown	2.5% pavement, 4% gravel
Slope of embankment	1 : 1 maximum
Side slope	1 : 4

K E N Y ALIST OF ROADS INCLUDED IN THE PROJECT

<u>Name of Road</u>	<u>Reference Number (See Map II)</u>	<u>Length in Miles</u>	<u>Type (See Annex II)</u>	<u>Surface</u>
Central Province				
Enbu-Meru	1	80	2	gravel
Kutus, Kerugoya, Karatina	2	23	2	gravel
Kagochi Tea Road	3	10	2	gravel
Tambaya	4	30	2	gravel
Kangema Road	5	16	2	paved
Kigumo	6	18	2	gravel
Kinjai-Mikunduri Loop	7	35	2	gravel
Githunguri-Ruiru	8	8	2	paved
Ndumberi-Githunguri	9	12	1	paved
Kikuyu-Kiambaa	10	12	2	gravel
Nyanza Province:				
Doho-Kendu Bay	11	7	2	gravel
Homa Bay-Kendu Bay	12	21	2	gravel
Kish-Kijaur	13	19	2	paved
Litein-Koiwa	14	13	2	gravel
Kamakuywa-Broderick Falls	15	15	2	gravel
Sirisia-Kitosh	16	22	2	gravel
Kakamega-Broderick Falls	17	24	2	gravel
Kericho-Kisumu	18	28	1	gravel
Yala-Mumias-Mutungu	19	18	1 & 2	gravel
Chevakale-Kaimosi	20	16	2	gravel
Rift Valley Province:				
Kapsabet-Kaimosi	21	12	2	gravel
Kapsabet-Eldoret	22	20	2	gravel
Southern Province				
Circular Secondary Road System	23	<u>105</u>	2	gravel
Total		564		

K E N Y ACOST ESTIMATEROAD PROGRAM

(U.S. Dollars Equivalent)

	<u>Local Currency Cost</u>	<u>Foreign Currency Cost</u>	<u>Total Cost</u>
Construction	1,140,000	1,900,000	3,040,000
Design & supervision 10% ^{1/}	200,000	100,000	300,000
Administration 10% ^{1/}	200,000	100,000	300,000
Contingencies 20% ^{2/}	320,000	400,000	720,000
Total	1,860,000	2,500,000	4,360,000

^{1/} Percent of total costs of construction.

^{2/} Percent of total costs of construction, design, supervision,
and administration.

A. ESTIMATE OF THE INCREASE IN GROSS VALUE OF PRODUCTION OF CASH CROPS

	1953	Acres 1959	1963	Increase 1954-1963	Yield (Acre)	Price ^{2/} \$ ¢/lbs.	Value per Acre Per Crop	Value of Increased Production 1960 = 1963 ^{1/}
Coffee	4,000	24,000	43,000	19,000 (clean)	1,000 lbs.	45	\$ 450	\$ 8.5 million
Tea	35	850	7,780	6,930 (made)	1,000 "	28	280	1.9 "
Pyrethrum	1,300	5,775	11,500	5,725	400 "	35	140	0.8 "
Cotton	-	112,650	140,100	27,450 (seed cotton)	300 "	7	21	0.6 "
Total								\$ 11.8 million or £ 4.2 million

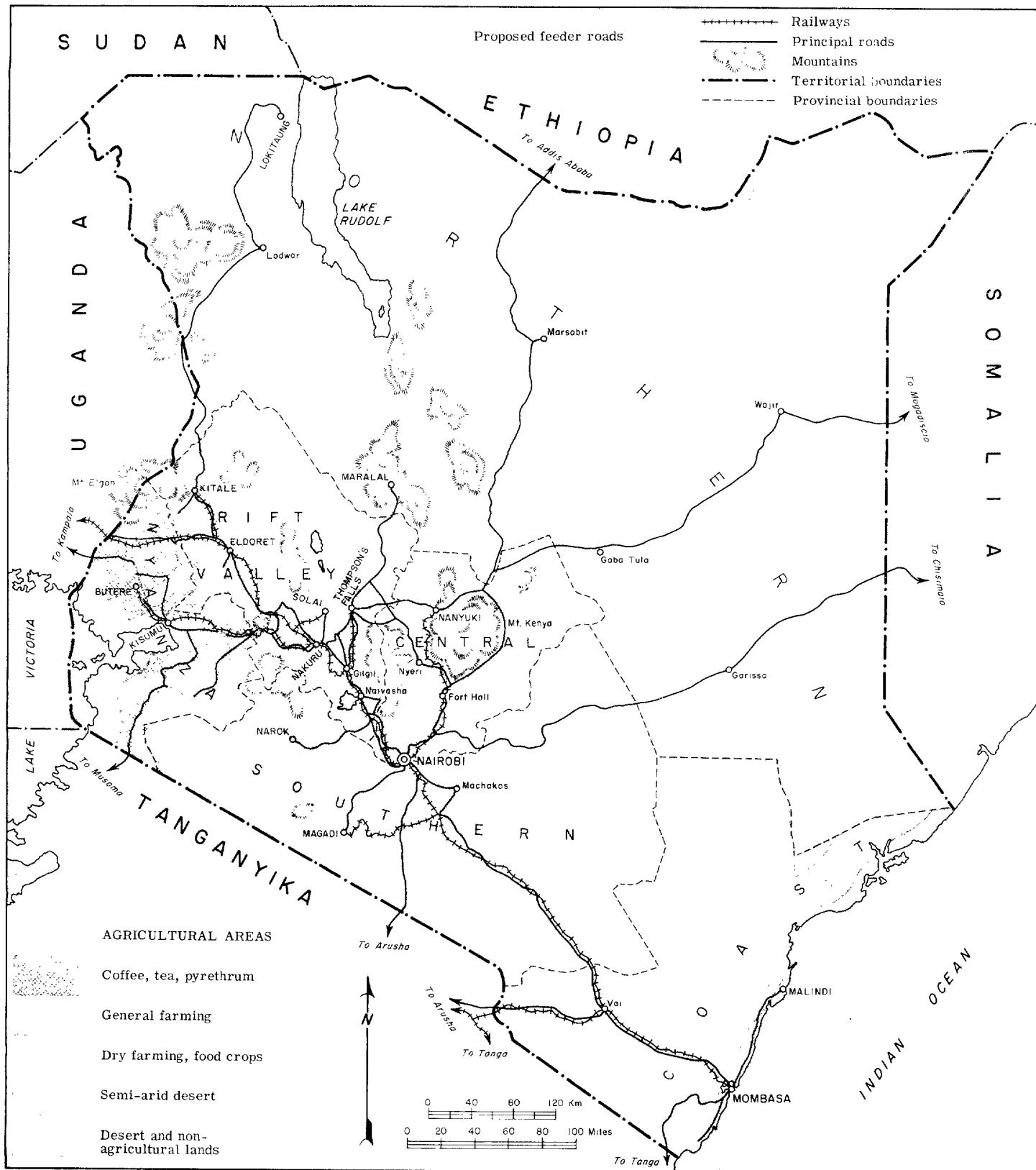
B. ESTIMATE OF THE INCREASE IN EXPORT VALUE OF SOME CASH CROPS

Crop	Increase in Acreage 1959 - 1963	Yield per Acre (lbs.)	Total Quantity (Metric Ton)	Export Price ^{2/}		Export Value 1960 - 1963 ^{1/}	
				(£ million)	(\$ million)	(£ million)	(\$ million)
Coffee	19,000	1,000	8,500	£ 415.0/ton	\$ 1,162.00/ton	3.5	9.8
Tea	6,930	1,000	3,100	sh 3.6/lb.	\$ 0.49/lb.	1.2	3.4
Pyrethrum	5,725	400	1,020	£ 290.0/ton	\$ 812.00/ton	0.3	0.8
Cotton	27,450 (lint)	100	1,225	sh 2.0/lb.	\$ 0.28/lb.	0.3	0.8
Total						5.3	14.8

^{1/} This means: the value of production and exports resulting from increases in plantings over the period 1960-1963. The production of coffee will not be realized until 1967, that of tea in 1969, that of the other crops in 1965.

^{2/} Actual prices of 1957 or 1958.

KENYA AGRICULTURE



KENYA FEEDER ROADS

