BOARD OF TRADE

Report of the United Kingdom Trade and Industrial Mission to GHANA

LONDON
HER MAJESTY'S STATIONERY OFFICE
1959

CONTENTS

FOREWORD

By the President of the Board of Trade

At the end of last year, in response to an invitation from the Government of Ghana and on behalf of Her Majesty's Government, I invited Sir George Binney to lead to Ghana a Mission of eight members representing British industry and commerce. The members of the Mission showed great public spirit in agreeing to undertake this task which they have carried out with enthusiasm, energy and ability.

I have read their report with great interest and I commend it to both exporters and industrialists in this country as a valuable survey of current conditions and prospects in Ghana at a most interesting period of its history. Ghana has imaginative plans for development to which this report is a most useful and timely guide. There should be increasing opportunities for British firms to associate themselves with this development. I therefore hope that the business community in this country will read this report with the care and attention which it deserves. The Mission's advice that they should go out to Ghana and get first-hand knowledge of the prospects there is especially worthy of attention.

Her Majesty's Government will pay careful attention to those of the Mission's recommendations on which we can help. The Mission's account of the Ghana Government's far-seeing plans for the development of education and technical training is particularly interesting. This is already an important field of co-operation in the Commonwealth and one which is to be further explored at the Commonwealth Education Conference which will take place at Oxford in July.

David Eccles

Board of Trade,
London, S.W.1.
May 1959.

DEAR PRESIDENT,

I have much pleasure in submitting to you herewith the report of the United Kingdom Trade and Industrial Mission to Ghana which visited Accra in March of this year in response to an invitation addressed to H.M.G. by the Government of Ghana, which had sent an official trade mission to the United Kingdom in March, 1958.

You stated in the House of Commons on 10th December, 1958, that the objective of our Mission was "to re-affirm the United Kingdom's interest in expanding trade between Ghana and the United Kingdom and recommend ways in which British enterprise might assist development in Ghana".

We have endeavoured in our conversations with the Ghanaian Authorities and with the Ghanaian and British trading communities in Accra, Takoradi and Kumasi, to make it abundantly clear that the value of still closer co-operation and understanding is vital to all interests concerned.

Our host in Ghana was the Hon. P. K. K. Quaidoo, Minister of Trade and Industries. To him and to the members of his Ministry we owe a deep debt of gratitude, not only for their great goodwill, but for their unflagging efforts to acquaint us with all aspects of commerce and industry which we were anxious to investigate. We had the privilege of discussions with nearly every member of the Ghanaian Cabinet, and were twice received by the Prime Minister, the Hon. Dr. Kwame Nkrumah.

Likewise we received every possible assistance and encouragement from the United Kingdom High Commissioner to Ghana, Sir Ian Maclennan, and from the United Kingdom Trade Commissioner, Mr. Bernard Carter, who took immense trouble on our behalf—both prior to and during our visit.

We also had a range of most valuable conversations with leading merchants, bankers and contractors and with the Educational Authorities so vital to the progress of a swiftly developing country.

In fine we have had full co-operation from all quarters and especially from the Board of Trade who from the beginning have spared no effort to help us with our endeavour "until it be thoroughly finished".

On our homeward flight from Accra we were grateful for the opportunity of spending three nights at Barcelona, which enabled us to prepare the first draft of our report prior to dispersal of the Mission on our return to England on 24th March.

Yours sincerely,

GEORGE BINNEY

May, 1959

The Rt. Hon. Sir David Eccles, M.P.,
Board of Trade,
Horseguards Avenue,
London, S.W.1.

PREAMBLE

The intention of this report is to convey to industrialists and traders and statesmen both in Britain and in Ghana the economic opportunities which beckon and the difficulties which confront a young and vigorous country in the early stages of its national development.

Our report being essentially confined to what we saw and learned in our brief investigation of 12 days coupled with our previous study of reports and statistics, little, if any, reference will be made to the astounding influences which loom over Africa today—not as one might expect with the gradualness of inevitability but with the spur of urgent expectancy.

To some of the senior businessmen and bankers whom we consulted in Ghana these were fully apparent, but others by no means all British by their all too complacent attitude belied a knowledge of the critical stress in which they were continuing to conduct their affairs long past the era for which their procedure was moulded.

Let us not waste time in wishful thinking that water can readily be made to flow uphill. We face a vital era of Pan African evolution, of which Dr. Nkrumah, Prime Minister of Ghana, is a protagonist. Far from this being an extraordinary phenomenon, it is nothing more or less than a natural process of education and aspiration. We see no shadow of foreboding in it—only the knock on the door announcing the advent of a new period of history needing exceptional wisdom in handling the transitional problems.

Under the direct instigation of the Prime Minister we found in Ghana a concept of education second to none, in our experience, in any part of the world. From its limited national income Ghana has devoted and continues to devote a generous segment of its revenue to the education of its people in surroundings of dignity and functional purpose. Equally, with technological education the equipment and the buildings compare very favourably with similar institutions of learning elsewhere.

This far-sighted policy of matching the standards of educational culture in Ghana with European and American standards augurs well for the future.

One of the most encouraging phenonomena which we experienced was the sense of dedication revealed in the work and the attitude of mind of the many expatriates* working directly for the Government of Ghana or in the sphere of education, industry and agriculture and in the public services.

Why should these men harbour such a loyal affectionate instinct to a young country revelling in the fresh delights of "freedom"? The answer is simple. The Ghanaians, if we may say so, are gay, attractive and intelligent people, whose outlook is one of goodwill and a sense of equality—particularly to their old friends the British. History will record that for at least a century we in the United Kingdom have been their sponsors, and as the future dawns on Ghana we for our part wish her well and hope that she may benefit from true guidance in seeking for herself the fulfilment of her destiny.

* This is a colloquial term widely used in West Africa to denote a resident born and bred elsewhere—applied generally to men working in industry or the public service.

Be that as it may, we would not be worth our salt if we failed to underline the difficulties which beset the path of any developing country. Ghana, with its considerable resources, is being courted from many directions with offers of capital equipment and long-term services which could outdistance the country's true requirements.

Finally, the members of this mission, all of us, it so happens, newcomers to West Africa, bring to this report a collective knowledge of Industry, Commerce and Agriculture garnered from almost every latitude and longitude of the world; and the fact that we are able to produce unanimous findings stems in our view from those basic principles which individual experience has taught us to apply in other competitive markets. If we evoke a challenge, may Ghana reap the full benefit.

SUMMARY AND RECOMMENDATIONS

Trade and Investment

1. Ghana is about the size of Great Britain and Northern Ireland. It has a population of about five millions with an average annual income per head of £G.55* which is high by comparison with that of other African states.

2. The Government is anxious to attract capital and the general investment climate is favourable. There is a considerable fund of goodwill towards the United Kingdom and there are undoubtedly opportunities for investment by United Kingdom manufacturers and trading concerns. In this connection we have noted the recent United States/Ghana investment guarantee agreement, and feel that a similar agreement between the United Kingdom and Ghana would encourage investment in Ghana.

3. Sensational newspaper reporting which is apt to give a wrong impression of general conditions is unfortunately prevalent, and too much attention should not be paid to it. There is no substitute for first-hand investigation.

4. Ghana is making great efforts to diversify her economy, and her Second Five-Year Plan which is scheduled to start in July this year is in our view ably conceived and capable of realisation. We agree that priority should be given to industrial projects for which the raw materials are available locally.

5. The part of the plan to be implemented immediately involves an estimated expenditure of £G.132 million, and it seems to us that the Ghana Government could provide sufficient funds to take care of that part of the development plan amounting to £G.106 million which is in the nature of public services and is, therefore, in the category of investment exclusively reserved to the Government. The balance of nearly £G.26 million is allocated to agricultural and industrial development and Ghana wishes to attract overseas investors to participate in this part of her programme. Apart from direct investment there should be numerous opportunities for British exporters to supply goods and services in the public and private sectors.

6. It is understood that the initial Volta River project will require about £G.65 million and is being treated by the Ghana Government as a separate financial and administrative problem, and for this overseas assistance will be indispensable.

7. The United Kingdom has been traditionally Ghana's main trading partner, and British private enterprise is still supplying the major part of her investment funds from external sources, but competition from other countries is already keen and is growing and United Kingdom interests will have to be both imaginative and very competitive if they are to maintain their position. We are aware that many of the United Kingdom concerns long established in Ghana have made large investments and have extensive plans for expansion of local assembly and manufacture. The part which such firms have played in the development of Ghana over the years is outstanding, but we have seen that with a few notable exceptions they appear

* £1 Ghana = £1 Sterling

to have placed too little store on the value of public relations. By hiding their light under a bushel they have seemingly deprived themselves of the full measure of goodwill and recognition to which they should be entitled, in the eyes of the community, by their past achievements and their planned contributions to the future.

8. Concerns at present trading with Ghana but not already established there on their own should, in our opinion, consider whether in the interest of developing their trade they should not seize the opportunity of establishing themselves forthwith rather than await the moment when the pressure of local competition may reduce the effectiveness of such action.

9. To assist the development of Industry and Agriculture, the Ghana Government has set up the Industrial Development Corporation and the Agricultural Development Corporation. These institutions are empowered to go into partnership with private enterprise, or if necessary to provide all the finance required for suitable projects. There is also a wide range of tax, duty and other concessions available. These are summarised in Appendix 3.

10. In establishing manufacturing or local assembly units, the main problem is likely to be the shortage of managerial and technical staff of proved ability. The Ghana Government is pursuing an imaginative educational policy, but many years will pass before the full effects are felt. Local manufacturing schemes must, if they are to be successful, make provision for the training of local technical and managerial staff, including the seconding of staff from the United Kingdom and in some cases the training of Ghanaians in the United Kingdom. The calibre of staff seconded from the United Kingdom for this purpose must be high.

11. In the short time at our disposal we were not able to study the openings for local manufacture in detail but some suggestions will be found in Chapter 3 of this Report. Those industries which are already established in Ghana are listed in paragraph 74 and those which the Ghana Government consider suitable for further investigations in paragraph 75. Paragraph 57 of the Report lists certain raw materials said to exist in commercial quantities.

12. Other countries are well aware of the importance of the Ghana market and their interest is manifest in the many trade missions which have visited Ghana since independence. In the face of this interest United Kingdom exporters cannot afford to relax their efforts in the Ghana market. We suggest that they would do well to pay attention to the following points:

(A) *Local Representation*

There has been in the past a tendency to include various West African territories under the generic term of West Africa, and many people still tend to assume that an establishment in any one part of such territories can cover the whole. Ghana can no longer be adequately served through agents established elsewhere in West Africa. An important point to bear in mind is that the Ghana Government has announced the setting up of a Supply Commission to take over the work hitherto undertaken by the Crown Agents.

(B) *Local Servicing*

There is a shortage of trained mechanics in Ghana, and machinery and equipment are often seriously overloaded. It is, therefore, essential that local servicing arrangements should be good, that Ghanaian mechanics

should be adequately trained and that adequate stocks of spare parts should be available.

(C) *Advertising*

Advertising is of particular importance in Ghana where quite simple techniques make much more impact than they would, for example, in Western European countries. Travelling film units make a big impression particularly on those rural communities where reading and writing are not yet a commonplace. Press advertising is, however, also important. The leading papers have a wide circulation.

(D) *Packing, Packaging and Corrosion*

As elsewhere, packaging is important, but particularly so in Ghana because of local conditions of high humidity and because much of Accra's supplies are still landed by surf boat, and are liable to damage from sea water. Close attention must, therefore, be paid to proper protection of goods. There is room for research into the suitability of materials for the Ghana market, which would be of wider value as similar conditions apply elsewhere in Africa. There is also scope for re-establishing on a West African basis the activities formerly carried out at the Tropical Testing Establishments of the Ministry of Supply for gauging the suitability of materials of all kinds to reduce recurring costs of maintenance and replacement.

13. During our stay we had no opportunity to make a detailed survey of market possibilities but those specific opportunities for expansion of United Kingdom trade which came to our attention are noted as appropriate throughout the Report. We do incidentally attach particular importance to projects for the local manufacture of packaging materials, since so many industries are in part dependent on packaging.

Public Works

14. Opportunities for British suppliers of capital and constructional equipment of all kinds are offered by the Second Development Plan and by the projected Volta River Scheme. Construction projects for the next five years are listed in Appendix 2 to this Report. These opportunities will require imaginative handling; terms will have to be keen and prospective tenderers for constructional projects will have to face the probability that their tenders will have to be of a "turn-key" nature including the provision of substantial credit. The general plans of the Government for development of all kinds are now known and invitations to tender for the most immediate projects will shortly be issued. In some cases, however, we feel that success is most likely to crown the efforts of those who take the initiative in putting forward detailed schemes for their implementation without waiting for projects to be put out to tender.

Electricity

15. Whether the Volta River project goes ahead or not, there will be considerable opportunities for the supply of British equipment during the next few years in connection with Ghana's plans to meet the demand for electricity, by thermal or other forms of generation. Recommendations for handling tenders, as outlined in the previous paragraph, are equally applicable to major electrical contracts.

16. We believe that there would be mutual benefit from co-operation between the Ghana Government and the United Kingdom Central Electricity Generating Board, to expand the existing schemes for training Ghanaian electrical engineers and to ensure that British experts will be available to operate and maintain new capacity, until Ghanaians are qualified and sufficiently experienced to take complete charge.

Agriculture

17. Because changes in agriculture necessarily involve many factors beyond those we were able to weigh-up during a short visit, we find difficulty in making specific recommendations. We would, however, call the attention of United Kingdom plantation interests to the possibilities arising from the Ghana Government's intention to encourage the introduction of new crops on plantation lines; and, in particular, to the fact that 400,000 acres of potentially good rubber land are available. We would also call the attention of United Kingdom tractor manufacturers to our opinion that there will be a need to provide Ghanaian farmers with an organisation of tractor and equipment services on co-operative lines, and suggest that this is a matter on which they might offer expert guidance.

Other Conclusions

18. In accordance with our terms of reference, we have in this report directed our attention to the prospects for trade and investment in Ghana which concern British enterprise. We have, however, inevitably been conscious of certain general underlying conditions and policies closely related to the prospects for successful development and increased trade with Ghana. On these we have the following suggestions to make:

(A) *Trade Guarantees*

From our discussions with Ghanaian merchants and traders we noted a sense of frustration amounting almost to grievance in that they found difficulty in ordering their requirements direct from U.K. manufacturers or export merchant houses. While this difficulty stems from occasional instances in the past where goods have not been taken up on arrival in Accra, the position could be alleviated if the Ghanaian authorities, in their natural desire to support the enterprise of Ghanaian merchants and traders, were to establish a means of guaranteeing the credit of private Ghanaian importers.

(B) *Education and Research*

Our observations in Ghana have convinced us of the great importance to Ghana's development of Commonwealth schemes for technical education, and consequently we welcome the Commonwealth Education Conference which is to take place at Oxford this summer. The generous contribution by the U.K. to the Kumasi College of Technology is an excellent example of the continuing help which Ghana is receiving. We realise the difficulties which lie ahead in meeting the demand for teachers for technical training in Ghana. We consider that emoluments, housing and general amenities offered in Ghana are good. Arrangements to avoid loss of seniority, pension and other rights to staff serving in Ghana would, in our opinion, be a most useful additional incentive.

Much might be done to improve present methods of recruitment, and one should aim at securing young unmarried or alternatively older retired teachers so that the problem of their own children's education does not become a deterrent to service abroad.

We gained the impression that many pupils were hampered both in their technical and general education by their limited vocabulary and imperfect understanding of English. We would set great store by steps to improve the scientific teaching of English from the earliest stage of education onwards.

We also noted that Ghanaian children lacked the opportunity at home and from the Primary School period onwards to acquire a mechanical sense by learning to play with mechanical and constructional toys. The absence of this background appeared to be a serious handicap to those proceeding to trade schools and technical institutes.

The Mission requested from the Ghanaian authorities details of engineering models and teaching equipment required by the technical institutes. British firms and Trade Associations can render a valuable service by supplying to teaching establishments their own wall charts and instructional literature. The Federation of British Industries has this matter in hand.

CHAPTER 1

ORIGIN AND AIMS OF THE MISSION

1. In March, 1958, a Trade and Goodwill Mission from Ghana led by the Hon. P. K. K. Quaidoo, Minister of Trade and Industries, visited the United Kingdom where they had cordial and informative discussions with Ministers and officials and with British industry and commerce. The President of the Board of Trade, the Rt. Hon. Sir David Eccles, announced in the House of Commons on the 10th December, 1958, that he had warmly welcomed the invitation of the Government of Ghana to send a mission to Ghana in return. The President appointed us, the undermentioned, to serve as members of the Trade and Industrial Mission.

Leader: Sir George Binney, D.S.O.
(*Director, The United Steel Companies Ltd.*)

Members: Mr. Bryan Donkin, B.A., M.I.C.E., M.I.E.E.
(*Senior Partner, Kennedy & Donkin—Consulting Engineers*)
Mr. R. G. Hoare
(*Division Director, Imperial Chemical Industries Ltd.*)
Mr. Peter W. E. Holloway, O.B.E., M.A., M.I.C.E.
(*Chairman, Holloway Brothers (London) Ltd.*)
Mr. Eric Owen (*Deputy Chairman, The Charterhouse Group Ltd.*)
Mr. Leonard H. Short, M.C., M.I.E.E., M.Inst.T.
(*Director of Overseas Operations, The English Electric Co. Ltd.*)
Mr. Peter Tennant, C.M.G., O.B.E.
(*Overseas Director, The Federation of British Industries*)
Mr. A. B. Waring
(*Chairman, Joseph Lucas (Industries) Ltd.*)
Mr. S. J. Wright, M.A.
(*Agricultural Adviser to the Ford Motor Company Ltd.*)

Secretary: Mrs. J. Bridgeman
(*Commercial Relations and Exports Department, Board of Trade*)

2. The President announced that the Mission would re-affirm the United Kingdom's interest in expanding trade between Ghana and the United Kingdom and recommend ways in which British enterprise might assist development in Ghana.

3. In the three months before leaving the United Kingdom we studied carefully much background material on all aspects of Ghana's economy and development since independence. We were also in touch with representatives of over eighty trade associations, many of whom we met at a general meeting at the Board of Trade; with numerous individual firms and with bodies such as the United Africa Company, the British Banks in Ghana and with the West Africa Committee.

4. We left the United Kingdom on Sunday, 8th March, 1959 by B.O.A.C. aircraft, and arrived in Ghana the following morning. During the first week of our stay we visited educational establishments, factories, agricultural stations

and mines in the neighbourhood of Accra, Tema, Takoradi and Kumasi. For three days we divided into three groups in order to carry out the widest possible range of visits and for most of the first week Mr. Wright undertook a separate programme of visits to agricultural establishments. During the 12 days we were in Ghana, we had talks with the Prime Minister and many Ministers and officials, local businessmen and also with Banks and Chambers of Commerce.

5. We left Accra on Friday, 20th March for Barcelona where this report was prepared. We returned to the United Kingdom on Tuesday, 24th March.

6. During two years of independence Ghana has received trade missions of one kind or another from Egypt, India, the Netherlands, Czechoslovakia, Tunisia, Italy, East Germany and Poland. Missions from Russia and Yugoslavia were expected after our return to the U.K. These missions are a measure of the interest the world is taking in Ghana and the anxiety of our competitors to win a larger share of the Ghana market.

7. None of them, so far as we are aware, has published a report of the kind set out here, in which we have made a survey of Ghana's economic progress and plans, with recommendations on ways in which trade and industry might be developed to the benefit of both Ghana and her trading partners.

8. We hope that this report, quite apart from its specific recommendations, will prove of interest to British industry and commerce, as in our view, far too little is known in this country about Ghana, her development and plans for the future. We were naturally not able to make an exhaustive study of the prospects in the course of a necessarily brief visit but we have done our best to indicate where the opportunities lie and hope that many firms will be stimulated to make a study, on their own account, of those prospects which attract them.

9. Some of our recommendations and conclusions may seem to fall outside the field of private enterprise but we gained the impression during our talks with Ministers, officials and businessmen in Ghana that our full and frank opinions on wider issues would be welcomed.

CHAPTER 2

BACKGROUND

10. Ghana, which includes the former United Kingdom Trusteeship Territory of Togoland, became a member of the Commonwealth on 6th March, 1957. The Ghana Government is formed from the Convention People's Party, with a large majority in the National Assembly, under the leadership of the Hon. Dr. Kwame Nkrumah.

11. Whilst Ghana is about the size of Great Britain and Northern Ireland, it is small in relation to the African Continent. The population of some five millions is only a fraction of the 200 million of the whole of Africa, though the per capita annual income of £G.55 is higher than that of any other African state. It is predominantly an agricultural country, depending particularly on cocoa, with timber and minerals the other major exports.

Agriculture

12. Ghana is largely self-supporting in staple foodstuffs, grown entirely on small peasant holdings. Main food crops in order of importance are plantains, cassava, yams and coco-yams, maize, millet, guinea corn and groundnuts. Cereals, groundnuts and some rice are grown mainly in the North where food production is almost the only occupation. The main food imports are wheat, flour, sugar, meat and fish products, rice, milk and vegetables.

13. Foodstuffs apart, cocoa, again grown mainly by hundreds of thousands of small farmers, is overwhelmingly the most important crop. It is all exported and accounts for nearly two-thirds of Ghana's earnings, bringing her an income many times that of pre-war, although because of a complex virus disease known as swollen shoot and of other disease following capsid infestation, the actual tonnage yield is smaller. The Cocoa Marketing Board has spent many millions of pounds on fighting these diseases. An effective means of controlling capsids by spraying has been evolved and over the next few years the Government is promoting an intensive spraying programme. So far the only known means of controlling the spread of swollen shoot is by cutting out infected trees and on this too—with some difficulty in obtaining the co-operation of farmers—a campaign has been waged since 1945. The Cocoa Marketing Board handles all sales of cocoa through the London market.

14. On a comparatively modest scale Ghana also grows many other tropical crops. Among those whose production might be expanded either for export or to provide raw materials for local industry are coconuts, coffee, tobacco, palm nuts, rubber, bananas and citrus fruits. Plans for growing more rubber and bananas in the South West, and more tobacco in the North, are already in hand.

Forestry

15. Ghana's timber resources, mainly hardwoods, are concentrated in the warm and humid forest belt and are a valuable source of export income. In 1958

Ghana supplied over 20 per cent of Britain's hardwood needs and is also developing her exports of plywoods and veneers.

Fisheries

16. The importance of the fishing industry is increasing and the Ghana Government is giving every encouragement to it. Motor fishing craft and canoes with outboard motors are being built at the new boatyard in Sekondi.

Mineral Wealth

17. The mining industry has long been established producing diamonds, gold, manganese and bauxite for export; it is largely expatriate-owned and managed, although many Africans now hold diamond concessions which are responsible for more than 40 per cent of the output. The mining industry has highly developed its training schemes, technical schools and other welfare institutions. Africans are employed in the expatriate firms at all levels other than the very top.

18. Some Members of the Mission visited Tarkwa and saw the Amalgamated Banket Area Gold Mines and also the open cut workings of the African Manganese Co. Ltd. at Nsuta. Other members of the Mission visited the Consolidated African Selection Trust Diamond Mines at Akwatia. Over 90 per cent of the diamonds mined in Ghana are industrial rather than gem stones. These organisations appeared to us to be excellently run with skilled management and up-to-date machinery.

19. The present position is shown by the following extract from the Report of the Mines Department for the period 1st April, 1957 to 31st March, 1958:

Gold, Diamonds, Manganese and Bauxite remain the only Mineral exports as in previous years. There is considerable activity in quarrying: operations for the production of stone for building and road-making purposes continued throughout the year. Drilling for oil was discontinued in the Western Region towards the end of the year.

Gold produced showed an increase of 28,532 ounces compared with 1956–57.

The value of diamond exports increased by £446,728 compared with the previous year due to a general increase in production which offset the decrease in the average value of the carats exported. The export of Manganese ore decreased by 26,017 tons over the previous year and the export of Bauxite increased by 76,158 tons.

The total value of the mineral products amounted to £28,632,837 made up as follows:

Gold Bullion produced	£9,888,268 at 248s. per fine ounce
*Diamonds exported	£9,012,792
*Manganese Ore exported	£9,181,146
*Bauxite exported	£550,631
	£28,632,837

* Figures provided by Government Statistician

Comparative figures for the years 1956–57 and 1957–58 are as follows:

	Quantity		Value		Decrease or Increase	
	1956–57	1957–58	1956–57	1957–58	Quantity	Value
			£	£		£
Gold Bullion produced: Fine Ounces	768,909	797,441	9,534,472	9,888,268	+28,532	+353,796
Diamonds exported: Carats	2,732,015	3,152,086	8,566,064	9,012,792	+420,071	+446,728
Manganese Ore exported: Dry Tons	644,178	618,161	7,486,772	9,181,146	−26,017	+1,694,374
Bauxite exported: Tons	153,834	229,992	383,619	550,631	+76,158	+167,012
	—	—	25,970,927	28,632,837	—	+2,661,910

20. The extensive road, rail and building programme has resulted in considerable quarrying activity. Mention should be made of the Shai Hills quarry which is connected to the railway system and which is providing the whole of the stone for the harbour at Tema, over 1 million cubic yards having been taken during 1957–58.

21. Details from a map in the Second Development Plan Report are included in a map at the back of this report, showing roads, railways and mineral deposits. It should be noted that, so far as we were able to learn, these deposits have not yet been proved either as to quantity, quality or suitability for industrial purposes.

22. The established mining industries are operating profitably with the exception of the marginal cost goldmines. They provide employment for a total of 32,000 Africans and nearly 900 Non-Africans, and considerable technical training facilities, i.e. trade schools, are made available to African employees. Altogether mining and quarrying employ some 47,500 persons in Ghana. In 1957–58 expenditure by non-African companies in Ghana was estimated at £G.8,424,685 of which £G.4,017,564 was paid in wages to Africans. In considering the future development of the industries outlined above a most important question is the promotion of Africans to positions of technical and management responsibility.

23. Founded on these basic industries of agriculture and mining Ghana's economy is not large but it is stable and healthy with a relatively high standard of living particularly in the towns. Ghana should not, therefore, be neglected as a market or a possible field for local manufacturing developments.

24. The Ghana pound (£G), at par with the British pound, is backed by the considerable sterling balances built up during the prosperous years of high cocoa prices, and provided cocoa prices do not fall excessively, Ghana's export earnings appear to be assured. The Ghana Government has announced its intention of encouraging local manufacture to lessen the country's heavy dependence on imports, but the establishment of industry on a substantial scale is likely to take some time, and the outlook remains good for British firms for the continued supply of consumer goods, side by side with the capital goods which will be increasingly needed for the basic development of the country.

25. Economic considerations apart, Ghana has a special importance we would do well to remember. The black lode star in the red, yellow and green flag of Ghana is a point of reference for many parts of Africa and also for the outside world. "Friendship with all", "positive neutralism" and "non-alignment" are declared policies of Dr. Nkrumah and Ghana has become a meeting point from which influence is spread throughout the rest of Africa. For this very reason we cannot afford to consider Ghana as marginal in our economic relations.

26. Nearly all Ghana's capital expenditure since independence has been associated with her Development Plans. The purpose of these plans has been to improve Ghana's basic services such as roads, communications and power, essential to the development of her industry and agriculture. The first of the plans was begun before independence, running from 1951–56 plus a "sandwich year" up to June 1957, and was followed by the Consolidation Plan, June 1957–59, taking in a number of projects not completed under the First Plan. The Second Development Plan will run from June 1959–June 1964. The following figures provide a useful comparison between the First, the Consolidation and the Second Plans.

	First and Consolidation Plans	Second Plan	
		Total	For immediate implementation
	£G.000	£G.000	£G.000
Agriculture and National Resources ..	7,616	24,668	10,425
Industry and Trade	5,548	24,533	15,418
Electricity (excl. Volta project)	4,440	8,765	7,000
Communications	35,955	53,010	28,679
Local and Regional Government ..	6,000	18,852	9,220
Education	17,390	27,852	14,150
Information and Broadcasting	1,176	2,677	1,693
Housing	7,862	17,000	7,093
Health Sanitation and Water Supplies ..	15,033	43,650	19,675
Police and Prisons	2,953	7,677	4,786
Miscellaneous	13,549	13,684	7,718
Contingencies	—	—	6,143
	117,522	242,368	132,000

27. The cornerstones of the Second Plan are education and agriculture, with rather more emphasis than in the previous plans on the development of local industries. In the later chapters of this report we have devoted some attention to these topics as well as to matters more directly affecting trade and industry, such as the public works and power programmes.

28. A result of the recent publication of the Second Development Plan is almost certain to be increased competition from other countries. Ghana had already ceased before independence to be a sheltered market for British manufacturers and since then she has tended to test out sources of supply other than those of the United Kingdom. British manufacturers in any case never benefited there from Commonwealth preference, although it is a fact that goods from Ghana receive the full benefit of free entry into the United Kingdom. The market is highly competitive but in our view it is worth the most serious attention. Our actions in Ghana in the immediate future, in the expansion of trade between our two countries and in the assistance which H.M.G. and private British enterprise can provide for development, will weigh heavily in the balance in our political and commercial relations with the rest of Africa.

29. Here we have a country in which race relations are natural and cordial and where the Britisher is welcomed and made to feel at home. Some elements of the Press of both Ghana and the United Kingdom tend to ignore this basic fact and would do well to temper their emotionalism on occasion and bear in mind the deep sympathy and understanding that underlie relationships between the two peoples in so many fields.

30. There are no figures available to show the extent of overseas investment in Ghana but in view of the number of foreign-owned subsidiaries which have sprung up locally, there must have been a fair influx of foreign capital in the past three years. The United Kingdom has been far and away the largest supplier of capital, as well as of technical assistance and training of all kinds. We believe we are still continuing to do much more than any other country to provide the investment capital and the technical training that Ghana needs. We must point out that much publicity has been given to offers of technical advice from the U.S.A. and other countries. For example, the Israeli interest in Ghana has attracted considerable attention. A Trade and Payments Agreement has been

negotiated between Ghana and Israel and Israel has participated financially and in the establishment and management of the Ghana Black Star Shipping Line, in the setting up of a nautical training school, and in the Ghana National Construction Company, which has already secured major contracts. Israel is also providing technical assistance to the Co-operative movement in Ghana. All these enterprises, however small they may be in relation to the magnitude of the British effort, receive considerable publicity and tend to overshadow United Kingdom activities in Ghana at present.

Land Tenure

31. Land in Ghana is nearly all owned by Africans and there are considerable problems to be overcome before concessions or leases may be obtained. For the purpose of this report it is sufficient to state that the prospective overseas investor in plantation-agriculture, sawmilling, mining or industry of any description, would be wise to avoid the complications and pitfalls of dealing with existing owners of land for the purpose of acquiring concessions or negotiating leases. He should in the first instance seek the advice of the appropriate government authorities such as the Ghana Commissioner of Lands and as far as industrial activity is concerned consider sites on industrial estates already acquired by the Ghana Government from their owners. Up to the present no leaseholds beyond 60 years have been granted for industrial enterprises, and the mission considers it would be an additional inducement to investors if 99 year leases could be negotiated.

CHAPTER 3

TRADE, INDUSTRY AND INVESTMENT

General

32. At the end of the last war the United Kingdom was, owing to the special circumstances of war, by far the largest importer of Ghana products (51·7 per cent) followed by the United States (27·7 per cent). Western Germany did not open up her market till later. Although by 1958 the United Kingdom's share of Ghana's exports had fallen to 36·2 per cent of the total, it represented in value more than three times that of 1946 (£37·83 million in comparison with £10·49 million). The United Kingdom still remains by far Ghana's largest market and the services of the produce markets of the City of London are very largely responsible for the sale of Ghana produce to the rest of the world. The U.S.A. in 1958 took 19·2 per cent of Ghana's exports and Western Germany 16·1 per cent. Ghana's export earnings depend to some 50 to 60 per cent on her cocoa and we are advised by British buyers that expanding world demand could absorb another 100,000 tons. Increased cocoa production should benefit Ghana considerably and help to stabilise prices provided Ghana maintains and improves her reputation for quality. The coming into being of the European Common Market, with its projected tariff of 9 per cent on cocoa and similar discrimination on other products of tropical agriculture, could damage Ghana's flourishing cocoa market in Germany to the benefit of French or Belgian African territories, but many world primary producers are also affected. The United Kingdom and other Commonwealth countries have joined forces in the G.A.T.T. to find what steps can be taken to mitigate this discrimination. While Ghana must for some time ahead remain essentially an exporter of agricultural produce she is doing well to diversify her agriculture, slow as the process may be, in order to be less dependent on the cocoa crop. If the Volta River project is developed, aluminium production would add to her export earnings. She can also count on a steady income from gold and industrial diamonds, manganese and bauxite. Timber both round and sawn, if it remains competitive in price with other world sources, can continue to be a valuable export and even a saver of imports if it is developed further as a material for the local building industry. While new industries are unlikely in the near future to save imports to any appreciable extent, Ghana has a heavy bill on imported foodstuffs which is likely to increase with a growth in the variety of the people's diet and here the plan for the development of livestock farming and fisheries may at any rate prevent an increase even if it cannot reduce the expenditure on imported food.

33. The United Kingdom was at the end of the war far the largest supplier to Ghana (63·8 per cent of imports valued at £8·43 million) followed by the United States (8·8 per cent at £1·16 million). Japan and Western Germany had not re-entered the market. By 1958 the United Kingdom share of Ghana imports had dropped to 43·3 per cent but was nearly 4½ times the immediate post-war value at £36·66 million; the United States' share had dropped to 5·1 per cent

but had risen in value to £4·31 million; Western Germany had exactly regained her pre-war share of the market with 5·7 per cent at £4·83 million. Japan had made a dramatic come-back with 8 per cent at £6·7 million in value (though this is lower than her share in 1956 and 1957), and the Netherlands had reached the position of second largest source of imports with 8·4 per cent at a value of £7·13 million. The post-war sellers' market did no service to the United Kingdom since for a long period manufacturers and their representatives in Ghana had too easy a time.

34. Those who paid too little attention to the needs of the market and gained a bad reputation for delivery, price, quality, servicing and the supply of spare parts, damaged the reputation of the United Kingdom as a whole and made it all the easier for our European, Japanese and other competitors when they were ready to enter the field. This position has been largely rectified but competition is now extremely keen and, although brand consciousness is still an important factor, taste is becoming more discriminating and consumer resistance is growing. The demand for credit adds a new element and so in the long run will the pace of industrialisation. This will reduce the demand for certain imports and increase that for others, partly capital goods to produce local consumer goods, partly other consumer goods to match an increased standard of living and purchasing power.

35. During 1958 British exporters lost ground in a number of commodities, in particular foodstuffs (£·79 m.), chemicals (£·66 m.) and machinery and transport equipment (£1·94 m.). Many of these setbacks were due to a contraction of the market owing to the world recession generally so that our share of the whole remained the same in many fields. Although our total exports to Ghana dropped by £4 m. in 1958 by comparison with 1957, our percentage share of the market increased from 42·2 per cent to 43·3 per cent. Nevertheless it would be unwise to draw much consolation from this fact and manufacturers would be advised to look to their laurels and re-examine the market on the spot to satisfy themselves that their selling and servicing arrangements stand up to local demands and are superior to those of their competitors. Individual visits to the market are essential as many local firms carry a multiplicity of agencies and will naturally give priority to those which give full support on the spot.

36. The Mission came across cases where performance did not seem to come up to requirements and these individual cases do discredit to the whole of our trade though they may only represent a very small proportion of it. Although long deliveries may reflect a sound order book position, they do not help to get future orders.

37. We found a few cases of goods being supplied in faulty condition and of inadequate packing resulting in severe damage. This may be attributable to rough handling in landing by surf-boat at Accra, but this is a factor which must be taken into account so long as this method is used and it applies without discrimination to goods from all sources. Also we feel that manufacturers should pay more attention to the effects of corrosion and other damage caused by the climate, particularly in the protection of metal goods and parts.

38. In this connection we must remark that simulated laboratory tests under alleged tropical conditions do not always produce a satisfactory product under tropical conditions and should be coupled with actual trials. We feel that consideration might usefully be given to reviving, on a West African basis and

under direct West African conditions, the work previously carried out by the tropical testing establishments of the United Kingdom Ministry of Supply with a view to reducing recurrent costs of maintenance.

39. The large British and European firms in Ghana handle some 85 per cent of the import trade; Syrian, Lebanese and Indian firms account for 10 per cent and Ghanaians for only 5 per cent. The small proportion of trade handled by Ghanaians is an increasing source of resentment among Ghanaian traders. The fact that growing numbers of Ghanaians are employed in positions of responsibility by the big firms is no palliative. The real cause of this situation is the lack of managerial experience among Ghanaians and the social and economic conditions which militate against the accumulation of capital for commerce or industry. This is partly due to inexperience in collective activity in the formation and running of companies, partly to the dissipation of capital among families as it is accumulated and its disintegration on death, partly to the temptations of quick and large returns on property investment or money-lending which could not be expected from commercial or industrial enterprises. There is also great difficulty in obtaining reliable credit ratings on most prospective Ghanaian importers, and many British exporters have been deterred from doing business because of their experience of the few Ghanaian, Syrian or Lebanese importers who have refused to take up goods when landed and have profited from acquiring them indirectly at cut prices through Customs auctions.

40. We believe that in Ghana as elsewhere it is a matter of time and experience before Ghanaian businessmen will be able to compete effectively. Inevitably this will be a slow process and patience is needed. In our opinion this should be done not by special protection (as protection is no school for a world of competition), but by gaining experience in British and European firms, by the enactment of adequate company legislation, and by a system of import guarantees, not loans, by the Ghana Commercial Bank which would be an inducement to British exporters. Finally we recommend that quite apart from the experience in management to be gained by working in the big British firms in Ghana and the United Kingdom, the existing business administrative courses offered by University College should be extended from students to businessmen and the scope of such courses should be widened to other institutions. The British Institute of Management might be prepared to assist in this field.

Industrial Development

41. An overwhelming and infectious sense of urgency has built-up in Ghana to accelerate the tempo of industrialisation and to induce overseas enterprises to provide the greater part of the capital required as well as all the skills and expertise. This natural desire by a developing country to broaden its economy, and to provide work for (and to teach new skills to) an expanding population and to diminish its reliance on the sales of its agricultural products is understandable. The economic prosperity of Ghana is at present almost entirely founded on its cocoa crop. Unless, however, a careful selection of industries is made, great harm could be done to the long-term economy.

42. Ghana's population of just under five million people with an average income of £G.55 a head, represents a comparatively small figure in global terms in a world in which there is keen competition to be met from the most efficient manufacturing countries. The average income is high compared with other African territories, e.g. Nigeria with £25, or India with £19 per head of population.

43. The success of any proposed industrial enterprise in Ghana will largely depend on:

(a) the availability in the locality at an economic price of the greater part of the basic materials required for the manufacture of the product;
(b) a significant saving in freight and duty costs associated with the importation from Europe or elsewhere of the finished product;
(c) sufficient labour being available and proper facilities being provided for training;
(d) first-class management being available;
(e) satisfactory distribution arrangements. It goes without saying that a market survey should reveal that the product can be absorbed in sufficient quantity to make it an economic proposition.

44. The Second Development Plan gives prominence to the incontestable fact that agriculture is and must remain for many years to come the primary industry of Ghana. Its expansion, supported by the creation of adequate water supplies, power and communications, will form the foundation of all industrial development. The Plan does in fact take account of these particular requirements.

45. It is evident that whatever investment may be attracted from abroad, the two Ghana Government agencies, the Agricultural Development Corporation and the Industrial Development Corporation, will have a prime part to play by the investment of their own funds.

Ghana Government's Industrial Organization

46. In order to encourage the establishment of manufacturing industries the Ghana Government last year effected a major re-organisation of the Industrial Development Corporation and Agricultural Development Corporation, and has set up an Industries' Division of the Ministry of Trade and Industries and an Investment Promotions Board. A number of enterprises have been established either entirely or partially financed by the Ghana Government.

47. We are, in this part of the report, concerned solely with the Industrial Development Corporation. The Corporation has been in existence since 1951, and had, according to accounts as at 30th June, 1958, which have just become available, at that date effected investments and loans amounting at cost to £G.2,765,147, against which a provision for depreciation of £G.534,451 had been made. The record of success of the companies in which the investments have been made is at the best irregular, and in some cases substantial losses have been made.

48. The Mission was able, during its stay, to visit a number of these enterprises and we were therefore able to form our own opinion as to their progress.

49. The conclusion reached is that the Corporation has tried to do too much with inadequate resources of everything other than capital.

50. If we may borrow for a moment from the admirable report of Professor Arthur Lewis in 1953, he states in paragraph 145 "African entrepreneurship is deficient in technical knowledge, in managerial capacity and in capital". Professor Lewis goes on to say in paragraph 148 "These requirements are listed because their importance is frequently overlooked. It is a common error in undeveloped countries to believe that entrepreneurship requires mainly technical knowledge and capital. The truth is the reverse: if people really have managerial capacity they will in most cases be able to find technical knowledge and capital to

work with. What makes a business successful is the efficiency of its management, for given this all else will follow."

51. We have thought fit to quote these paragraphs because we are entirely in agreement with them and consider them to be of fundamental importance. Had we ourselves written paragraph 148 we would have deleted the words "in undeveloped countries" since the error is universal. Although we appreciate the difficulties of setting up a new organisation and attracting to it the right calibre of individuals, we cannot escape the conclusion that at least up to the date of the last I.D.C.* report the managerial resources of the corporation have been inadequate. We say this in all friendliness and not so much in criticism as pointing the way to the more successful conduct of the business in future.

52. We have studied the Development Plan closely and note that the amount of Government funds apart from private investment to be devoted to Industrial Development over the next five years amounts to £G.10 million.

53. The Plan seems to us to have been ably conceived and capable of realisation provided its progress in the way of expenditure does not exceed the resources of managerial ability available at any time. We appreciate that in many instances I.D.C. will be in partnership with commercial interests able to provide the necessary management services but this does not affect the fundamental thesis.

54. In fact such is the importance of the success of the industrialisation programme that no effort or expense ought to be spared to ensure that the very highest skills available are secured.

55. In this connection we recommend that not only should the management team *per se* be strengthened but also the accountancy side, since it is of paramount importance, in the establishment of new businesses in particular, that the exact position should be known at frequent intervals.

56. So far as the projects for actual industries are concerned we are of the opinion that priority should always be given to those projects the raw materials for which are, or can be made, available locally, i.e. mineral resources and agricultural products.

Industries based on Local Minerals

57. The following industries based on mineral raw materials available in Ghana are considered by the Ghana Government to be worthy of examination, but the mission did not have an opportunity to make detailed investigations:

Abrasives	Stone	Fillers
Cement	Glazed tiles and whiteware	Pigments
Whiting	Fertilizers	Salt
Clay products	Lime	Glass

58. Under *abrasives* the following five separate industries might be considered:

(a) Diamond cutting and tool setting (polishing of gem diamonds is also a possibility);
(b) Exploitation of garnets;
(c) Grinding stones from bonded sandstone;
(d) Sand blasting and burnishing from silica sand which could be used for burnishing in a glass industry;
(e) Scouring minerals, the manufacture of grease-removing soap and scouring powders from powdered felspar.

*Industrial Development Corporation.

59. *Cement.* Large limestone deposits exist but investigations so far suggest that they might be uneconomical for exploitation for the purpose of manufacturing portland cement. On the other hand other limestone deposits containing a percentage of magnesium and useful for manufacturing natural cement occur.

60. *Whiting.* Quantities of pure white limestone from shell banks are available for development into a white distemper industry.

61. *Clay Products.* It is considered that bricks, tiles, earthenware pipes and conduits could be produced from Ghana clays.

62. *Foundry.* Sands suitable for use in foundries are available.

63. *Stone.* Crushed stone for the building industry and for road construction is available, also high quality granite which can be used for high quality building and ornamental purposes, i.e. both dimension and crushed stone is available.

64. *Glazed Tiles and Whiteware.* Felspar and nepheline syenite similar in composition to the raw material used in the U.S.A. is available for use in manufacturing wash basins and lavatory ware, etc.

65. *Fertilisers.* Limestone occurs which could be used for making fertilisers although investigations carried out so far indicate that limestone fertilisers are unsuitable for any of the major crops grown in Ghana.

66. *Lime.* Limestone again can be used for the manufacture of lime for various purposes.

67. *Fillers.* Talc schists are available for use as fillers in the manufacture of pesticides, paper, rubber, plastics, paints, talc powder and soaps.

68. *Pigments.* Ochres and umbers are available for use in the dye industry.

69. *Salt.* Solar salt can be produced in pans along the coast which could serve as a basis for a chemical industry.

70. *Glass.* Quartz sand is available for a glass industry.

71. *Iron ore.* Iron ore occurs in the Northern Region which is considered capable of being upgraded for commercial purposes.

72. *Low Grade Manganese ore.* Quantities are available.

Agricultural and Fishery products

73. Although industries founded particularly on agriculture and fisheries are not included in the above list, developments in these fields will in due course lead to opportunities for export or industrial investment from the United Kingdom. The following headings give an indication of the range of activities.

Cotton	Tobacco	Rice
Coffee	Maize	Pigs
Oil palm	Yams	Poultry
Coconut	Groundnuts	Abattoirs
Rubber	Sugar	Fisheries
Banana	Millet and Sorghum	

74. The Second Development Plan lists the following industries which have already been established in Ghana:

Sawmilling, including veneers and plywood	Oxygen and acetylene
Furniture	Soap
Pre-fabricated doors, etc.	Face powder
Boat building	Breweries

Matches
Bricks and tiles
Leather and plastic bags
Tyre re-treading
Pottery
Concrete products
Machinery repair
Bicycle assembly
Refrigerator assembly
Nails
Foundry products
Steel storage tanks
Minerals and soft drinks
Refrigeration
Biscuits
Food processing
Edible oil refining
Cocoa butter
Confectionery
Cigarettes and cigars
Clothing
Footwear
Printing

75. The Plan also lists industries not yet established in Ghana but which are regarded by the Ghana Government as capable of successful exploitation. Of this list a small number of industries has been examined by the Industrial Development Corporation whilst the majority remain at present no more than theoretical possibilities. Manufacturers interested in investigating these projects, some of which are already under negotiation, are recommended to get in touch in the first instance with the Permanent Secretary (Industries), Industrial Promotion Division, Ministry of Trade and Industries, Accra.

The list is as follows:

Cotton spinning and weaving
Bleaching, dyeing and printing textiles
Knitwear
Tanneries
Leather goods
Boots and shoes
Cement
Glass
Building materials
Paper and paper products
Domestic hollow-ware
Aluminium products
Metal processing
Radio assembly
Motor car assembly
Metal screws
Bottle caps
Starch
Steelmaking
Distilleries
By-products of salt
Paints and colours
Varnishes and lacquers
Pharmaceuticals
Fertilisers
Insecticides
Cosmetics
Rubber products
Plastic products
Bamboo products
Coir products
Pencils
Oil mills
Flour milling
Canneries
Fish products

76. **Packaging Materials**

Glass
Paper and paper products
Aluminium products
Bottle caps
Plastic products

A common requirement in the production of most consumer goods is the availability of adequate supplies of packaging materials and components at competitive prices. Under present conditions Ghana manufacturers must import most, if not all, packaging components.

77. All the industries mentioned in paragraph 75 require to a varying extent the availability of packaging materials. It is recommended that some priority be given by the Industrial Development Corporation to the detailed survey of these packaging projects, and particular encouragement be given to their establishment

in favourable cases, thus providing a distinct incentive to the subsequent development of consumer goods industries.

Pharmaceuticals

78. Total imports of pharmaceutical products into Ghana amounted in 1958 to £1·63 millions, of which the United Kingdom share was £1·25 millions. With the progressive improvement in the Ghanaian standard of living expected to arise from implementation of the agricultural and industrial development programmes, and with the increasing attention being paid to the health services, this must be regarded as an expanding market which will repay close attention by manufacturers.

79. Pharmaceutical production is included, in the Second Development Plan, in the list of those industries which are thought to be suitable for establishment in Ghana. We believe that this must be taken to mean pharmaceuticals' processing and packing, since we see no prospect in the immediate future, for the establishment of a synthetic drug industry.

80. There is at present no local processing or repacking of imported bulk drugs, and a formidable obstacle to the successful establishment of a unit (or units) of this kind is the absence of packaging materials referred to above. Thus all components, in addition to bulk drugs, would require to be imported, offering little economic incentive to an overseas manufacturer, for such local production. In the event of projects for the production of packaging materials and components developing successfully, the economic picture surrounding the local processing and packing of pharmaceutical products from imported bulk drugs might well become favourable.

Fertilisers

81. Importations of synthetic fertilisers are currently negligible and usage is largely confined to experimental work by research and demonstration organisations. In particular, use of synthetic fertilisers in the dominant cocoa industry has not developed due to:

(a) the conditions of peasant husbandry under which the crop is produced;
(b) the small farmer's comparative contentment with the economic return shown under simple methods of cultivation, and
(c) the absence of knowledge of the additional financial returns which might be gained by prior outlay on artificial fertilisers.

82. The West African Cocoa Research Institute is following an exhaustive research programme aimed at finding out the precise mixtures suitable for the Ghanaian cocoa soils, and giving increased yields. Remarkable yields have been demonstrated on their own plantations using N.P.K. mixtures with trace elements and this work is being extended to demonstration farms throughout the cocoa lands by the Agricultural Department of the Ministry of Agriculture.

83. It is thus hoped to show the peasant farmer, in practical terms, the benefits to be gained by the use of artificial fertilisers, together with other modification in the traditional methods of cultivation. Similar work and demonstration is contemplated in regard to crops other than cocoa.

84. It is not expected by local authorities that response to this work will be rapid, although the readiness with which the farmer is currently taking up the

use of insecticides in capsid control might indicate an equally quick response in the use of fertilisers, if the advantages are successfully demonstrated.

85. Manufacture in Ghana of artificial fertilisers is visualised in the Second Development Plan, but in the absence of known deposits of suitable raw materials, together with, in particular, insufficient available electric power, pending development of the Volta River Plan, such manufacture is considered to be premature. Topographical and geological surveys are in hand which might change the picture in regard to availability of raw materials.

86. Meanwhile it can be expected that importations of phosphatic fertilisers, as N.P.K. mixtures, will increase in the next few years.

Chemicals (By-products of Salt)

87. Importation and usage of chemicals, as commonly understood, is currently small, but with the projected expansion of industry, will probably rise in the coming years.

88. Production of solar salt occurs in the coastal lagoons but this is not developed and yield is uncertain and variable. The possibility of expansion of solar salt production on an efficient basis is under investigation by the Industrial Development Corporation, who have engaged a team of Japanese consultants to report on this.

89. If an efficient solar salt industry is established following expert survey, the production of chlorine and caustic soda is contemplated. A small but increasing demand for caustic soda exists in the local manufacture of soap, but chlorine requirements are small, being limited to water purification.

90. The installation of a plant to produce pulp and paper from domestic timber is under study by the Industrial Development Corporation, and this plant would be a consumer of chlorine and caustic soda. Whilst it is unlikely that an electrolytic chlorine/caustic soda plant of minimal size could lead a separate economic existence, its inclusion as part of a pulp and paper factory, with shared overheads, might be feasible.

91. No other opportunities are foreseen for production of chemicals, as such, in the light of the present pattern of industrial demand and availability of raw materials. It can however be expected that the pattern and scale of demand will change over the coming years, having regard to the projected industrial expansion; meanwhile opportunities for increased trade will probably arise.

Insecticides

92. Agricultural and forestry products constitute some two-thirds of Ghanaian exports. The Government is alive to the value of insect and pest control in increasing the efficiency of the agricultural industry and is energetically encouraging the use of control methods by the farmer, in particular capsid control in cocoa production.

93. Insecticide and pesticide products can be regarded as an expanding market. The I.C.I. is erecting a plant at Tema for the production of insecticides for use in an organised campaign sponsored by the Ministry of Agriculture against capsid infestation of the cocoa crop.

94. The development of insecticide usage is leading to an increasing demand for spray equipment, in particular knapsack sprayers, both hand and motor

driven. Of those seen in use the former were predominantly British, whilst the latter were of German manufacture. There appears to be lucrative scope for development and sale of a powered British knapsack sprayer.

Ghana Supply Commission

95. The Government of Ghana has appointed the Ghana Supply Commission to take over the duties which hitherto the Crown Agents in London, on behalf of the Ghana Government, have carried out in the placing of contracts and the design work and inspection associated with them. We were advised that this process of taking over the Crown Agents' duties will take place gradually, but ultimately tenders will be called for in Accra from firms who are on the list of approved manufacturers of the new Commission. We were also advised that in due course manufacturers will be invited to apply for inclusion on this approved list and at the same time to submit copies of their technical publications. Such an invitation will have wide publicity in all principal cities overseas.

Economic Development and Finance

96. It is clear that considerable capital will be necessary to finance Ghana's economic development programme.

97. The total amount shown in the latest Development Plan, including £G.100 million for the Volta River Scheme, is £G.350 million.

98. Of this amount the Government estimates that it has available from various sources about £G.90 million in addition to which an estimated £G.15 million from the export duty on cocoa will be set aside for financing the plan over the next five years. By a dramatic gesture, during our visit to Ghana, these resources were increased by an estimated £G.5 million p.a. or a total £G.25 million by a reduction by the farmers of the price to be paid to them for cocoa during the period of the Plan.

99. The total resources therefore amount to about £G.115 million or more. It is evident that the implementation of the full plan would require borrowing on a substantial scale. The Minister of Finance has however stated that he is reluctant to saddle his country with a load of debt and would prefer partnership with overseas industrial capital.

100. The Ghana Government has therefore laid down a certain scale of priority which throws up projects for immediate development amounting to approximately £G.132 million apart from the Volta River Scheme. We now understand the amount of capital likely to be required to carry out the latest recommendations for the Volta River Project is about £G.65 million. Since it is however likely to be in the nature of a public service for which finance must be provided from official sources, we do not propose to comment further on it here. Of the £G.132 million mentioned above, all but about £G.25 million is again in respect of Public Services. It is therefore evident that it will be most useful to the Government if private investors can be attracted to take care of a large part of the agricultural and industrial development projected in the plan and amounting initially to £G.25 million.

101. Ghana has no capital market and is unlikely to have one for some time to come and with an average annual income of £G.55 a head the formation of indigenous capital is a difficult process. The function is largely taken over by the Government through the operations of the Cocoa Board. On the other hand the

United Kingdom has always been far and away the biggest factor in capital formation and we again draw attention to the continuing contribution of the United Kingdom in this field.

102. How then can further trade between our two countries be fostered and overseas investors attracted? Before we arrived in Ghana we studied the statements made by the Prime Minister, the Minister of Finance and other leading Ghanaians about foreign investment in Ghana. There is no doubt that the present Government of Ghana is anxious to inspire confidence in foreign investors and they have given many assurances that foreign assets will not be arbitrarily expropriated. The Prime Minister has on a number of occasions drawn the attention of potential investors to Ghana's economic stability. The Ghana Government have been studying a report on tax incentives to foreign investors drawn up by a United Nations expert and announced last year certain new tax concessions to encourage investment (see appendix 3). They are now awaiting the recommendations of the company law expert Professor L. C. B. Gower of the London School of Economics, whom they appointed last year to review their Company legislation.

103. In addition Article 34 of the Constitution of Ghana provides *inter alia* that no property will be expropriated compulsorily without payment of adequate compensation, the amount to be settled, if in dispute, by the Supreme Court of Ghana. But it must be borne in mind that the Constitution can now be changed by a simple majority of the legislature.

104. The Ghana Government has, however, signed an agreement with the Government of the U.S.A. guaranteeing the rights of American investors in Ghana. It has also expressed its willingness to enter into similar agreements with other countries.

105. We recommend that H.M.G. should consider entering into a similar bilateral agreement to increase the security of British investors.

106. On 4th March, 1959, in Parliament, the Prime Minister, when introducing the Second Development Plan, stated: "As to capital investment I have made a number of statements during the past twelve months which have been quite categoric in giving assurances that capital from overseas is welcome in this country and the Government has introduced several measures to make conditions for capital investment attractive."

107. The statements above referred to include the new tax regulations and assurances that capital and profits may move freely from country to country.

108. It will be seen therefore that the general climate for investment is favourable. In this regard we feel that too much attention should not be paid to sensational reporting and comment in sections of the Press of both Ghana and the United Kingdom, which in our view gives a misleading impression and does much harm to relations between the two countries.

109. With a population of nearly 5 million persons and with very few local manufacturing industries to serve them we are of the opinion that there are undoubted possibilities for investment by overseas countries. There is no doubt in our minds that, in view of the nationalistic feeling in the country, exporters in the United Kingdom cannot rely upon retaining indefinitely their markets in Ghana in the face of growing local production. We feel that this growth in industrial production will take place whether by means of investment by United Kingdom interests, other overseas interests or by the Ghana Government. We

therefore recommend that it is well worthwhile for United Kingdom manufacturers to send very senior representatives to Ghana to explore the particular conditions of their own trades with a view to manufacturing locally. They will receive every possible assistance from the Ghana Ministry of Trade and Industries.

General

110. In the important branches of engineering covered by this survey it is worth adding a special note to say how essential it is for manufacturers at home and their representatives and agents in Ghana to see that adequate stocks of spare parts are available in the territory and where necessary, too, firms should maintain trained factory representatives in Ghana. The spare-part business makes a welcome addition to the annual turnover of the local company to say nothing of the manufacturer. It is an added incentive to the client to continue to obtain equipment from the supplier and it is worth remembering, too, that with the establishment of the Ghana Supply Commission, materials and spares will often be called for locally. Now is the time for manufacturers to attend to this side of their business rather than wait until an enterprising competitor takes the lead.

111. We are aware that several of the powerful expatriate trading firms have substantial plans to follow up their already large investments in Ghana by the establishment of a number of additional manufacturing units.

112. It must be remembered, however, that, although unskilled labour is plentiful, investors must look forward for some time to having to provide know-how and managerial services as well as capital.

113. With regard to capital the Ghana Government is willing to provide part, if desired, but is reluctant to provide finance solely for management without any corresponding financial stake.

114. The following category of industries is reserved entirely for the Government:

Railway transport
Electricity generation for public sale
Radio broadcasting
Atomic energy
Armament manufacture
Waterworks for the public sale of water
Telecommunications
The export of cocoa

115. A second category where Government participation is mandatory embraces the manufacture of alcohol, alcoholic beverages and narcotics.

116. All other industries are open to private investors on the following conditions on the undertaking to observe certain rules. These rules are "to recognise trade unions, to train Ghanaians for superior posts, to employ Ghanaians in superior posts wherever feasible, and to develop the use of local raw materials wherever possible".

CHAPTER 4

PUBLIC WORKS

117. We have dealt in the preceding chapter with the opportunities for trade and industrial investment that may be expected to arise in Ghana during the next few years, partly in consequence of normal economic development, partly in consequence of the Second Development Plan and the Ghana Government's avowed intention of encouraging secondary industry. In this chapter and the two following on Electricity and Power, and Communications, we deal with some of the opportunities that should arise for British contractors, engineers and suppliers of capital equipment, in connection with Ghana's plans to develop the basic services of the country.

118. The activities of the constructional industries in Ghana since the war can be clearly seen by anyone touring the country. Many millions of pounds have been spent on roads, bridges, harbours and the provision of new buildings for public and domestic use.

119. The industry is not today working at the same high tempo which existed some 4 or 5 years ago when the first 5-year Development Plan was at its peak. Now the extended Consolidation Plan is drawing to a close and the resources of the industry can be said to be gathering their strength for a resurgence of their energy to cope with the vast programme set out in the Second Development Plan 1959–64, the full effects of which will not be felt for approximately 12–15 months.

120. It is necessary first to appreciate the type and scope of the works which have been and are being carried out.

Roads

121. Generally the trunk roads are excellent. Except for a stretch of 50 miles of roadway west of Accra towards Cape Coast, very few completely new roads have been built over the last 5 years. The present network comprises 1,500 miles of bitumen surfaced roads and hundreds of miles of secondary roads. £G.17 million has been spent on new construction and reconstruction of existing roads since 1950. The Road Fund is financed principally from taxes on petrol, and care is taken to ensure that new roads once built are well maintained. Map 2 of this report shows the road and railway systems.

122. The standard trunk road consists of a 22 feet carriageway with 5 feet verges and deep drainage berms on either side. The stone generally used is laterite, consisting of a very hard clay enclosing nodules of hard stone the colour of red oxide. This material can be crushed and graded satisfactorily and also binds well when laid as a water-bound macadam on secondary roads. Trunk roads are formed with a sub-base of 4–5 in. of second grade laterite on a prepared earth foundation, superimposed with 5–6 in. of first grade laterite, sealed with bitumen and covered with $\frac{1}{2}$–$\frac{3}{4}$ in. chippings sprayed with bitumen. Small bridges

usually consist of simple reinforced concrete spans, the larger spans being of steel.

123. The Public Works Department is the chief authority responsible for road construction. It has an establishment of 111 engineers (56 in post) and 51 architects (37 in post used mainly on building projects) and approximately 160 other supervisory staff. The larger works are let out to contractors by competitive tendering in accordance with the scale of Financial Classes published in the Register of Contractors for Government Works as follows:

Class 1. Exceeding £G.100,000.
„ 2. £G.60,000 to £G.100,000.
„ 3. £G.35,000 to £G.60,000.
„ 4. £G.20,000 to £G.35,000.
„ 5. £G.8,000 to £G.20,000.
„ 6. £G.3,000 to £G.8,000.
„ 7. Up to £G.3,000.

Normally tenders are only invited from firms registered in the particular class according to the value of the work and in the next two higher classes.

124. All works are divided into four categories as follows:

Category A. Road Works.
„ B. Civil Engineering Works.
„ C. Special Building Works.
„ D. General Building Works.

The Register is published once a year and each Contractor is allotted a grading from 1 (top grade) to 7 (lowest grade) in each of the four categories of work. Several leading British companies appear in the Register and are graded 1 in most of the categories in which they work: not more than three are, however, actively engaged in contract work at present. P.W.D. also operates 2 mobile road gangs completely mechanised.

Port Construction

125. Having had an opportunity of seeing at first hand the time-honoured, primitive, but nevertheless effective method of handling cargoes in the surf boats at Accra, members of the Mission were also able to visit the modern port of Takoradi, and the new Tema harbour now under construction.

126. The building of Takoradi harbour was begun in the late twenties. Its two stone breakwaters enclose an area of 220 acres. It was designed and built by British consulting engineers and contractors, as also were the extensions to the quays which have been completed in post-war years. Further new construction of both quays and storage buildings is in hand.

127. The construction of Tema harbour was first planned to provide a port to assist in the development of the Volta River Project, and it will no doubt play its part in this great enterprise in due course. It became evident, however, as early as 1952 that a new port in the Accra area was becoming essential. Construction began in 1954 when a consortium of two British firms was awarded the contract on a design prepared by British consulting engineers. Early progress was delayed through various causes but rapid strides have been made during the last two years and completion is anticipated by 1960.

128. Stone for the two large breakwaters and for all concrete requirements is quarried twenty miles away in the Shia hills and conveyed by rail to the site.

Large blocks of stone weighing several tons are tipped into the sea to form the main breakwaters to a total length of 12,000 feet. The quay walls are of large concrete blockwork construction with infilling of stone and excavated material. The blocks are placed individually by divers. The new storage sheds built in both structural steel and reinforced concrete are of the most modern design with large span roofs and a minimum of supporting columns.

129. We spent a day visiting the Harbour works and the New Town. Progress is now satisfactory although the early setbacks suffered in the construction of the harbour have left their marks in the minds of many people, both African and British, in authoritative positions in Ghana.

130. Information concerning the port services available at Takoradi and Tema is given in Chapter 6.

Water Supply

131. Water is plentiful in Ghana, but a great deal has still to be done to ensure that it reaches the areas where it is most needed.

132. Most of the large towns are supplied from neighbouring rivers which are adequate except where rapid expansion has outgrown the supply system, or severe drought reduces the supply at source. The recent period of exceptionally dry weather during the early months of 1959 accentuated these difficulties and the Mission experienced some of the resulting inconveniences both in Accra and other main towns. It is therefore not surprising that the provision of additional supplies takes a prominent place in the next five year plan.

133. Main distribution is usually carried by 12-in. C.I. pipes with smaller diameter asbestos or pitch fibre pipes for secondary mains. Rural supplies are obtained by forming collection points supplied from rivers and purified in settling tanks, or by the increasing use of boreholes and pumping to small storage tanks.

Sewage Disposal

134. The need for a proper system of sewage disposal in Accra and other large towns has long been recognised, but the centre of Accra still relies on a system of bucket collection into lorry tankers which are emptied on the beach adjoining the town. Buildings in all other areas of Accra and in other towns also rely on individual septic tanks which require de-sludging once a year. The new town of Tema referred to below is to be provided with a complete water-borne sewage disposal plant from which the effluent will be conveyed 1 mile out to sea in a 22-in. submerged pipeline. Meanwhile the need for an adequate system in Accra grows daily greater. The Government is aware of the urgency, and it is believed, will be taking the necessary action very shortly.

Housing

135. Over 600,000 people live in towns with populations exceeding 5,000. The natural increase of births over deaths is $1\frac{1}{2}$ per cent p.a. and the towns are increasing by a further $1\frac{1}{2}$ per cent p.a. due to the drift from the country to the populated centres. At present each house accommodates, on an average, 2·7 families. It is impracticable for the Government to finance the building of one house per family but schemes are in operation to assist the private individual to acquire a site and build his own house. These consist of:

(a) *A Roof Loan* scheme by which a man who has provided himself with the walls of a house can be assisted to purchase the necessary roofing materials.

(b) *Self-Help Housing Schemes* which make sites available for intending owners to form themselves into properly organised teams to work in the afternoons and at week-ends. Materials are provided on loan.

(c) *Building Society*. The First Ghana Building Society advances loans up to 80 per cent of value of a house and in some cases up to 95 per cent.

(d) *Preparation of Sites*. The Government makes tracts of suitable land available and provides roads, drains, electricity and water. The owner has to provide his house, for which loans are available, and to meet the development charge which becomes payable when the lease is signed.

136. *The Tema Development Corporation* is responsible for providing housing for the new population which will grow rapidly as a result of the construction of the new Port of Tema and the adjoining industrial zone. The town is planned for 7 communities each designed to comprise from 10,000 to 12,000 inhabitants. Each community represents a cross-section of all classes of the population.

137. Members of the Mission had the opportunity of inspecting one community in occupation, and one under construction. Houses range from a 2-room type with kitchen, shower and water closet at a rent of £G3 10s. 0d. per month to £G6 per month for a 4-roomed house. They are built of concrete blocks with asbestos roofs, and supplied with piped water, electricity and a water borne sewage system. The plan is enterprising and boldly conceived and deserves success. As, however, the rents are not subsidised they may well be beyond the means of some of the workers, who have already tended to sublet their rooms to additional families, thus destroying the ideal of 1 house per family and leading to the formation of slum conditions. Good quality flats are available for those able to afford higher rents. Terraced houses have been built at Takoradi, with individual rooms let separately at rents ranging from 17s. to 30s. per room per month with communal arrangements for cooking, washing and toilets.

138. Apart from schemes such as those described above the vast majority of the lower paid African urban population live in what are little more than shacks built of timber and corrugated iron. In the villages the houses are usually built of adobe thatched with palm fronds.

139. There appears to be considerable scope for the introduction on a large scale of a suitable type of timber house. Although timber houses have been and are being built in some areas, there seems to be a prejudice against them generally on the grounds that they are unsuitable for the climate and provide only temporary accommodation as compared with the small concrete house. Modern methods of construction can, however, ensure that timber houses remain cool, that the timber can be protected against termites and wood borers, and that they will be competitive in price with other types of construction.

140. The Ministry of Works and Housing in Ghana have expressed an interest in this matter and would like proposals for extensive timber housing development to be put to it.

Industrial and Private Building

141. The demand for factory buildings has decreased in the last 2 or 3 years, but extensive building is in hand on the new Tema industrial site where 15 European firms have reserved factory sites. All types of buildings have been erected including some with reinforced concrete barrel-vault roofs.

142. Building for industrial, office, or domestic use has not developed on a large scale. Expatriates who might normally wish to develop valuable land have been unable to purchase sites freehold since the country became independent. New blocks of offices are under construction in various parts of Accra, but the rate of construction has declined below that of a few years ago. The decision of the Industrial Development Corporation to proceed with the construction of the Ambassador Hotel in Accra has met a long-felt need. First-class accommodation is available with approximately 100 rooms reserved several weeks ahead. There are also extensive public rooms and the building does credit to the British architects who designed it and the British contractors who built it.

143. *Legon University College*, Accra, is another example of the quality construction work which British architects and contractors can produce. The college halls, libraries, chapels and lecture rooms are excellent examples of the craftsmanship which can be produced in masonry, joinery, plastering and other trades by Ghanaian labour.

144. *Contractors Plant.* All types of contractors plant to meet the usual requirements of the industry appear to be available and are generally in use. Agencies have been set up to cover the sale of most of the leading British and foreign makes, and supplies of the normal spare parts are available. The P.W.D. will make loans to small African contractors to enable them to purchase their own plant. Except in the field of heavy earthmoving equipment, British plant appeared to be generally in use and giving good service. Foreign contractors tend to use plant obtained from other sources.

145. *Plant Hire.* Plant can be hired from the P.W.D. when not required for its own use. Individual firms on occasion make their plant available on hire, but there is no organisation specialising in this type of business. It is in fact doubtful whether there is at present a sufficient demand, although P.W.D. would be glad to see their smaller contractors having easier access to mechanical plant.

146. *Air-conditioning Equipment.* This is becoming standard in all the best quality houses and hotels and in some offices. The small window box type is in general use and as there is practically no cool season, an efficient maintenance service is required to keep sets running over long periods. Large buildings and hospitals will require larger installations, but so far Ghanaians seem to prefer natural ventilation.

147. *Labour.* Unskilled labour is plentiful and being migrant will follow wherever work is available. Skilled tradesmen are scarce and like other key men have to be transported to the work. The basic labourer's wage is 5s. 6d. per day rising to 11s. per day for a carpenter and 20s. 3d. for a mechanical equipment operator. Wages are approximately 10 per cent higher in the towns of Accra, Kumasi, Takoradi and Tema.

148. *Insurance.* There is no National Health or Unemployment Insurance.

149. *Conditions of Contract.* The standard Institution of Civil Engineers form of contract for civil engineering works and that of the Royal Institute of British Architects for building are generally in use. The Ministry of Works and Housing have confirmed that no change in the above procedure is contemplated.

150. *Office Accommodation.* Although scarce hitherto, supply is now keeping pace with demand. Telephones are obtainable only after a 2-year waiting period.

151. *Builders Brigade.* This organisation came into being in August, 1957, mainly to provide a form of occupation for the large number of unemployed among ex-servicemen and school-leavers of both sexes. A retired British Army Officer has been appointed National Organiser. Camps were initially formed at Accra and Damongo in the Northern Region and 20 are now in operation with a total membership of 7,000. The target for membership is 25,000. The members are organised to carry out unskilled work on building low-cost housing and helping to establish model communities in agricultural areas. They are provided with uniforms with badges of rank, are paid 4s. per day in cash, and receive two meals a day.

The Second Five-Year Plan as it affects the Constructional Industry

152. A summary is attached in Appendix 2 indicating the cost of the constructional works which have been extracted from the Summaries of the Report on the Second Five Year Plan. The figures quoted are only intended to be approximate as in some cases it has not been possible to separate the cost of the constructional work from the other administrative costs for the various projects. They serve, however, to indicate the scale on which the future development of Ghana is being planned.

153. Under the Second Development Plan, £G.28,679,000 is to be spent on Communications: £G.10,459,000 of this is for Road Construction. Health, Sanitation and Water Supply at £G.19,675,000 is another large figure which includes £G.3,620,000 for the Accra Sewage Disposal and Korle Lagoon Drainage at Accra, both of which are to be put in hand shortly.

154. If the Volta Project is put in hand in the near future, it would appear probable that some of the projects for which allowance has been made for immediate implementation may be deferred at least temporarily.

Future Prospects for Public Works and Constructional Projects

155. With the prospect of a total capital expenditure of not less than £G.132 million, excluding the Volta Project, to be spent over the next five years, it would be idle to suggest that there is not adequate scope for the development of a virile building and civil engineering industry, and this is readily appreciated by both British and foreign consultants and contractors. Since independence was declared there has been a tendency for European and some Asian firms to increase their activity at the expense of some British firms who have been established over many years.

156. Faced with such a large development programme it is inevitable that the various Ministries will be hard pressed to find sufficient professional and technical experts to bring all their schemes to the tendering stage at the time required.

157. We were advised that in principle, and except in one or two cases, the Government would prefer to put fully prepared specifications out to tender

rather than call for "turn-key" projects. Nevertheless they have agreed to accept such bids and they are being subjected to considerable pressure from some nationally organised teams of experts. These offers which are launched with full diplomatic assistance contain detailed estimates for any project which a Ministry may be contemplating. Such teams of experts numbering up to 8 or 10 fully qualified people require considerable financial backing which the average firm, whether consultant or contractor, is unwilling to provide unless he is assured of a fee or a contract. One can only surmise that such teams have financial resources which are not available to the ordinary firm at the present time. The threat is a real one and British industry must consider how it can put itself in a position to make equally attractive offers of assistance.

158. Keen competitive tendering must be expected to continue and contractors must be prepared to offer bids on such "turn-key" or "package deal" terms complete with designs and with provision for credit terms where necessary.

Building Materials

159. Ghana is at present not well equipped to become self-sufficient in building materials. There are however some items which can be produced from local resources and the recently established West African Building Research Institute is doing excellent work both in carrying out investigations into the most suitable types of materials for local production, and in advising merchants on the best materials for import into the country. The most widely used materials are concrete and asbestos.

160. Adequate stocks of concrete aggregate exist in most parts of the country, but good quality sand is scarce. The hollow concrete block is used universally. Clay bricks and roofing tiles have been manufactured from time to time and still are to a certain extent. They have been largely ousted by the keen competitive price of concrete products. Concrete tiles were not in evidence, but should prove popular if price is competitive. There would be a demand for bricks and hollow clay partition blocks if they could be produced at a price to compete with the concrete block. Cement is imported; 64 per cent from the United Kingdom, about 13 per cent from Belgium and the rest from other European countries including Eastern Germany and Czechoslovakia, all at about the same cost of £G.8 12s. 0d. per ton c.i.f. Israel and Poland are now moving into this market.

161. In spite of extensive research no suitable materials have been found accessible in sufficient quantities to justify the setting up of a cement works in Ghana. A factory is shortly to be built at Takoradi using imported cement clinker to provide the basic material for the manufacture of natural cement. The manufacture of lime has also been investigated but lime burning has not been developed to any great extent. Lime is imported at the same price as cement, and the Building Research Centre is endeavouring to persuade the various authorities to specify a mixture of lime and cement mortar in their building construction and also in the use of cement rendering on the external faces of buildings to prevent excessive cracking.

162. Pipes of all sizes and types are imported, the majority of these being asbestos. Plastic pipes of small diameters are now being imported in large quantities and there is an extensive market for these products and all plastic products for the building industry in general. Pitch fibre pipes are also being imported and are competing with asbestos. For water supply schemes cast-iron pipes are used

for the larger diameters and asbestos for the smaller size. There appears to be an excellent market for the sale of pre-cast concrete products if they are within reasonable distance of the site of their use, and some firms are already well established in a small way. Prestressed concrete products have been used to a small extent but these have mostly been manufactured on the site of the works. Owing to the cost of transport over long distances, it is doubtful whether there is sufficient demand to justify the setting up of a prestressed concrete industry at this stage especially as materials for high-grade concrete are not plentiful.

163. Although Ghana has large supplies of home-grown hardwood timber, it is still difficult to obtain seasoned timber in Ghana, due largely to the high priority given to the export trade. Most of the present timber merchants sell the durable hardwoods, which are more resistant to termites and demand a higher price. Consideration could well be given to the establishment of an industry set up to provide timber for the building industry from lower grade logs. These are available at a reduced price compared with the durable hardwoods and would require treating and drying, either in the open air or in kilns. Anti-termite plants are available and provided sufficient capital is available to cover the cost of the timber while it is being seasoned a profitable industry might be developed.

164. As stated above, corrugated asbestos sheeting is used almost universally for the roofs of all but the most expensive types of buildings, while galvanised sheet is less suitable due to the heavy corrosion problem. Corrugated aluminium sheeting is now keenly competing with asbestos sheets. There is a demand for light structural steel work and a factory for fabricating trusses and light steel buildings, is already in operation near Accra using imported steel section.

165. Glass is not manufactured in Ghana. All paints are at present imported and competition is keen. There is a considerable market for all types of imported metal windows; the opening louvre type is very popular although it is not completely waterproof. Ungalvanised frames are not suitable for the climate and difficulty is experienced in obtaining galvanised frames from stockists. Good hardwood frames are available and are used extensively for housing.

CHAPTER 5

ELECTRICITY AND POWER

166. Whether the Volta River project goes ahead or not, there will undoubtedly be considerable opportunities for the supply of British equipment during the next few years as the Ghana Government takes steps to meet the demand for electricity.

167. At present there is a suppressed demand in some areas due to a shortage of generating capacity, and restrictions are in operation on the installation of cookers. New generating plant is in the process of being installed and these restrictions should be lifted within a fairly short time. Once this leeway has been made up, it is anticipated that the rate of growth should be 10–12·5 per cent p.a.

Electricity Demand (*Public Supply*)

168. (a) Total generation during the last three years.
1954/55—55 million kWh. approximately.
55/56—66 million kWh. approximately.
56/57—77 million kWh. approximately.

(b) The units for each of the three years may be divided between the consumer groups as follows:

(a) Domestic	50 per cent
(b) Commercial	9 per cent
(c) Power	25 per cent
(d) Flat rate, prepayment street lighting and miscellaneous	16 per cent

(c) The percentage increase in the number of kWh. generated has been:
1954/55—15 per cent.
55/56—16·5 per cent.
56/57—14 per cent.
*57/58—40 per cent.

Electricity Supply

169. (a) Total generating plant capacities:
1954/55—19MW. approximately.
55/56—27 MW. approximately.
56/57—34 MW. approximately.
*57/58—35 MW. approximately, 44 MW. by end of 1959.

(b) At present all Government stations have diesel engine driven generators.

(c) For diesel stations the present policy is to standardise on units having nominal ratings of 100, 200, 650, 1,250 and 1,660 kilowatts.

* Figures obtained independently

(d) Station load factors (i.e. units generated expressed as a percentage of the maximum demand times the number of hours) vary between 25 and 50 per cent. The majority of stations have a load factor towards the upper limit of this range.

(e) Increase in generating plant capacity:

1952/53—Plant installed—15 MW. approximately.
53/54—Increase 1 MW. approximately.
54/55—Increase 3 MW. approximately.
55/56—Increase 8 MW. approximately.
56/57—Increase 7 MW. approximately.
*57/58—Increase 1 MW. approximately, 8 MW. during 1959.

(f) Plans for the expansion of generating capacity are for a new thermal power station at Tema and for the extension, as necessary, of existing diesel power stations. A decision on the type and size of generating sets for the Tema station is at present deferred pending a decision on whether a start is to be made on the Volta Scheme in the near future.

(g) The nominal standard supply details are:
400 volt, 3-phase, 50 cycles, 4-wire for power and 230 volt, single-phase a.c.; Tafo is 200 volts d.c. As a new 11-kV. feeder has been laid from Koforidua to Tafo, the Tafo d.c. station will be closed down in the near future and all supplies in the area will be in accordance with the standard details given above.

Transmission

170. Most of the larger stations have high voltage transmission, either 11,000 6,600 or 3,300 volts. Future major transmission lines include 66,000-volt interconnectors between Accra and the new Tema power station.

Resources

171. (a) All fuel supplies have to be imported.

(b) Fuel is transported either by rail from the ports to the inland stations or by tanker vehicles.

(c) The Volta River Project includes the construction of a hydro-electric plant at Kosombo, near Ajena, with available power of approximately 600 MW. The majority of the power would be for the associated aluminimum industry and 50 MW. has been reserved for general electricity supplies. Further possible sources of hydro-power are at Kpong Rapids nearby and at Bui Gorge.

(d) Nuclear power stations require very large quantities of cooling water. This would limit the possible sites for nuclear power stations to the coast and to those very few rivers, such as the Volta, which continue to flow during the dry season.

Costs

172. (a) Generation costs vary between 1·2d. per unit for the larger stations to 2·75d. per unit for the smaller ones. These figures include only fuel, lubricating oil and labour, and exclude capital charges on plant and distribution costs.

(b) Diesel fuel cost is £17 10s. 0d. per ton at the port.

* Figures obtained independently

(c) Depending upon the location of the generating station, fuel is sent either by rail or tanker vehicles.
Typical freight charges are:
Takoradi–Kumasi (171 miles)—3·9d. ton/mile.
Takoradi–Tarkwa (42 miles)—4·75d. ton/mile.
Takoradi–Oda (138 miles)—3·95d. ton/mile.
In addition the Electricity Department has a fleet of vehicles for supplying the more isolated stations, also for all supplies between Accra Bulk Supply Depot and Accra, Legon and Tema Diesel Power Stations.

(d) Allowing for buildings, site works, plant, auxiliaries, erection, etc., capital costs vary between £G.60—£G.100 per kilowatt installed capacity, depending upon cooling arrangement adopted.

(e) A period of 20 years is normally taken for the amortisation of generating plant.

Mining Industry

173. All the above details refer to Government operated stations; in addition the various mining concerns generate a considerable amount of power for their own use:

	Generation	*Plant Capacity*
1953	43·9 million kWh.	15·28 MW.
1954	50·24 million kWh.	17·23 MW.
1955	57·77 million kWh.	19·12 MW.
1956	67·41 million kWh.	27·45 MW.
1957	86·56 million kWh.	Not available
*Year ending 30/3/58	191·8 million kWh.	55·1 MW.

(Per government printed statistics—includes gold, diamond, bauxite and manganese mines.)

The above figures are for calendar years, whereas those for Government stations are for financial years.

174. The majority of the mines generation is by diesel engines, but a small amount, now principally at Bibiani, is by gas producers. The Ashanti Goldfields Corporation Mine at Obuasi did carry out a considerable proportion of their generation by gas producer plant, but due to longer hauls for the wood, and other considerations, generation by this means is no longer as economic as it used to be. Consequently all generation is now by diesel engine driven plant.

Power Survey

175. Future developments for power supply to all towns with the exception of the sparsely populated north, hinge on the Volta projects. If proceeded with, there will be adequate power for all Ghana, but it would be only economic to link Accra, Kumasi and Takoradi with transmission lines, feeding into this triangular grid at Accra from the sites on the lower Volta and/or at Kumasi from Bui on the Black Volta.

176. On the lower Volta at Ajena or Kosombo a mile downstream are sites suitable for a dam giving about 215 to 230 feet average head and capable of being developed in two stages, each involving three 126 MW. sets.

* Figures obtained independently

177. The Bui site is some 120 miles north-west of Kumasi near the Ivory Coast border where a dam at the gorge would give a head of 220 feet and an output of 120 MW.

178. 12 miles below Kosombo on the Volta River are the Kpong Rapids where a 120 MW. 40-ft. head run-of-river station could be built, but only following the construction of one of the above mentioned upstream projects, since a large dam creating seasonal storage is necessary to provide a reasonably uniform flow throughout the year at Kpong.

179. Other sites on the Pra, Ancobra and Tano rivers are to be investigated—all are in the south-west.

180. The cost of the power per unit from Bui or Kosombo would be low enough to encourage the mines and other industries to take their supplies from the grid.

181. In the North the policy will probably be the setting-up of small diesel generating stations to supply electricity by means of high voltage overhead lines over a radius of 20 to 25 miles. The building of these small electricity supply systems could only be justified in those areas where the population density and the development of industry or agriculture indicates the probability that electricity supply, if subsidised initially, would be likely to pay for itself within, at most, the amortisation period of the power plant and the distribution mains.

182. It is worth noting that there exists at present at least one British make of simple and robust steam engine with boiler, designed to burn low grade coal, wood, cotton waste, dung, etc., and to use muddy river water in its boiler. Such a unit developing 5 to 7 h.p. could be used either for electricity supply in a small village or large farm, and for such purposes as corn grinding mills, winnowing machines, rice hullers, oil presses, cane mills, etc. The f.o.b. price of this power unit is about £1,000 and it can with safety be run by relatively unskilled labour. Thanks to the extensive forests and forestry industry in Ghana timber and loppings from trees are cheaply available in many areas so that a small steam engine of this type could make a useful contribution to raising the standard of living, especially in the remote country districts which otherwise might have to wait a long time before they could obtain electricity or motive power from a public supply of electricity.

183. All existing diesel generating plant in Ghana for public supply and industry has been supplied by British manufacturers, some of whom have their own spare parts stores and resident service engineers. This ensures good service and reasonable prices. Ghanaian engineers and mechanics are familiar with British practice—a useful advantage.

184. Following the recent visit of the Czech Mission, three 120 KW. diesel generating units have been ordered by the Ministry of Works for the Electricity Department to use at Obuasi.

185. It is understood that the Tema power station will be built regardless of the decision on the Volta schemes because the Accra load is rising rapidly and the three stations in the Accra-Tema area have a total of 20 diesel engines in service or in process of installation.

186. A British firm of consultants is shortly to invite world-wide tenders on behalf of the Ministry of Works for the generating plant, and the terminal equipment for the 66 kV. line at Accra.

Nuclear Power

187. The Ghana Government has shown interest in the development of nuclear power and whilst this might be attractive in comparison with the present cost of generation by diesel engines using imported oil fuel, the present day designs of nuclear reactors cannot compete with the estimated cost of electricity from the Volta River project. Furthermore, nuclear reactors must, if best value is to be obtained from them, be worked at near 100 per cent annual load factor, and other plant provided to meet peak load demands. It is therefore concluded that nuclear power is not suited to Ghana's present needs.

Future Demands

188. There is an unsatisfied demand for electricity in the main centres of population due mainly to hesitation in ordering new thermal plant pending a decision on whether the Volta hydro-electric scheme is to be realised. The Halcrow reports* have been under consideration for some time, but the chief obstacle to progress is the provision of the necessary capital for construction. In 1958 Dr. Nkrumah approached President Eisenhower as the result of which Kaiser Engineers of U.S.A. were nominated to re-examine the scheme. The Kaiser Company's report was delivered to the Prime Minister during our visit and is being actively examined by the government. The Kaiser report was not available to the Mission, but we understand that it substantially supports the Halcrow reports while recommending an alternative site for the dam about a mile further downstream, which would cost slightly less and give slightly more power in the ultimate development.

189. Granted an adequate assurance of demand for a large proportion of the output available, it would clearly be advantageous for Ghana to develop this new major source of electricity, which would provide for many years a cheap, abundant and reliable source of power for industrial, commercial and domestic use.

The training of electrical engineers and technicians for the electricity supply industry

190. The Government Electricity Department is finding grave difficulty in recruiting suitable men. The present practice is to recruit young men who have undertaken a course of practical and theoretical training at one of the Technical Institutes (it is now proposed that the best of these young men should sit for the Ordinary National Certificate examination) and give them a three-year apprenticeship course in electric power supply. Some of the best men are then sent to the United Kingdom for further training with the Central Electricity Generating Board or with the Area Electricity Boards.

191. Whether or not the Volta River project is realised together with the high voltage (132 kV. or 165 kV.) transmission and low voltage distribution, the problem of recruiting and training suitable men for the operation and maintenance of the complete electricity system will be greatly intensified. We feel that the existing system of training mentioned above must be reinforced by a request

* *Report on Development of the River Volta Basin.* 15th August, 1951. By Sir William Halcrow and Partners.

Three-volume report *The Volta River Project.* Vol. II, "Engineering Report to the Preparatory Commission." 1956. By Sir William Halcrow and Partners.

to the C.E.G.B. and Area Boards for suitably qualified and experienced staff to be seconded to Ghana firstly to help with training and secondly to take charge of the operation and maintenance of the scheme from its inception until Ghanaians are trained technically and to take responsibility for management at all levels. It should be remembered that the Ghanaians speak English and are used to English equipment and methods. Therefore the opportunity for the United Kingdom to help is unique.

CHAPTER 6

COMMUNICATIONS AND TRANSPORT

192. Nearly a third of the Ghana Government's total development expenditure has so far gone on the development of roads, railways, harbours and communications, and whilst the Second Development Plan does not envisage quite so heavy an emphasis on the development of communications, more is nevertheless to be spent on this sector than on any other.

Railways

193. Ghana has 617 miles of 3 ft. 6 in. gauge track linking Accra, Kumasi and Takoradi. The railway carries much of the country's imports and nearly all its exports of cocoa, timber, manganese and bauxite.

194. Passenger journeys in 1952 were 6,739,000 falling to 4,997,000 in 1957 which can be attributed to the improvement in roads and the introduction of modern long-distance buses, but the year to 30th March, 1958, showed an increase in passengers to 5,189,000, and over the same period 1952–58 freight rose from 1,835,000 tons to 2,131,562 tons for the year ending 30th March, 1958. The railway operates 142 steam and twenty-seven diesel locomotives and has on order a further thirty-six diesel locomotives due for delivery during 1959 and 1960. The policy of the railway is to proceed with dieselisation and it seems likely that, notwithstanding the possibility of bulk electric power being available in the future, this policy of changeover to diesel working is fully justified in the light of the anticipated traffic development. No considerable development of railway track is planned, unless the Volta scheme is fully implemented.

Posts and Telegraphs

195. *Postal Services.* In 1958 the 139 post offices and 533 postal agencies handled 11,630,000 surface and 10,960,000 airmail items despatched, and 11,700,000 surface and 5,450,000 air mail items received from overseas with 51,600,000 items delivered in Ghana. As a measure of the growth of this service the total figure of all classes of mail handled in 1958 is double that of the year 1954. Internal daily mail services are maintained by rail, road and air and this internal service is run almost entirely by Ghanaian personnel. There seems room for modernisation in the mechanical handling of mail and a U.K. firm specialising in the field might do well to send out an expert to advise on layout and the installation of equipment.

196. *Telecommunications.* The total number of telephones in use in Ghana at the end of December 1958 was 19,000 and direct lines installed totalled 10,769. There are 309 manual exchanges and two automatic at Accra and Kumasi with a third at Sekondi/Takoradi under construction. The route mileage of overhead lines is 3,590 and the line mileage is 19,800.

197. The V.H.F. network is growing with a present route mileage of about 500 and a radio circuit mileage of 14,000 including Accra–Koforidua–Kumasi

and Accra–Winneba–Cape Coast–Takoradi. By October 1959 there will be six circuits between Accra and Ho, and Kumasi and Sunyani. It is the intention of the department to consolidate this system during the next few years with single circuits to small communities. Single side branch V.H.F. links are being supplied to the police and are being considered for the Army. A Telex system is being installed between Accra and London and between Accra and Conakry. Discussions are also taking place between the Ghana Government and Cables and Wireless regarding the provision of new radio links between Accra and London, and Accra and Lagos.

Navigational Aids

198. These are being improved at Accra Airport and at Takoradi Harbour and the latest type of approach equipment is being obtained for the new harbour at Tema.

199. The Posts and Telegraphs have for some time been training Ghanaians to take positions at all levels, and considerable experience has been acquired in handling the existing telecommunications equipment. The British Post Office and British manufacturing firms have supplied skilled personnel for advice and servicing experience and it is very necessary that this valuable link should be maintained between supplier and user.

Broadcasting, Information Services and Press

200. The Ghana Broadcasting Service is a department of the Ministry of Information and Broadcasting; it maintains three transmitters in Accra and thirty-four relay stations throughout Ghana.

201. The installation of transmitters at a central point to cover the whole country is being considered and fifteen or so further relay stations are planned. The service transmits daily in English, French and six local languages.

202. The Government's plan for external broadcasting is to establish four 100-kW. shortwave transmitters capable ultimately of reaching any part of the world. In the first instance broadcasts will be confined to English and French, but at a later stage it is hoped to broadcast also in Arabic, Hausa, Portuguese and Swahili.

203. The *Government's Information Service* provides a steady flow of official information through the main office in Accra, and five regional offices. It operates thirty mobile cinema vans, and the Ghana Film Unit has made over fifty films, several of which have gained international awards.

Press

204. In 1957 it was one hundred years since the first newspaper was published in Ghana, and the country is well supplied with daily and weekly papers. Most are printed in English, but some are in local languages. The largest circulation of any daily is 80,000.

Television

205. An experimental television transmission with a limited number of receivers is to be carried out by British companies during the Royal Visit next November and may well be the beginning of a permanent service.

206. Closed circuit T.V. is being considered for observation of hospital theatre operations and also of precious mineral sorting at the mines.

Electronics

207. *Computers.* The Director of Meteorological Services, Accra and the Professor of Physics, Accra University, have suggested that a Mathematical Unit equipped with an electronic computer could form part of a national institute concerned with the physical sciences and ultimately responsible to the National Research Council.

208. A census is to be held in Ghana in 1960 and the possibility of using an electronic computer was actively considered; at the Government's request a number of firms manufacturing this equipment tendered, but it was then realised that there was insufficient time to install one and train the operating staff. Calculating machines are to be hired for the census. The Government are still interested in the further use of computers. British firms should keep in close touch regarding this enquiry and it is not too early to consider selecting a few Ghanaian students with a view to their being specially trained in the United Kingdom.

209. *Instruments.* There is a steady demand by Technical Colleges, Posts and Telegraphs, Airways, Broadcasting Service, Police, and the Army for electronic instruments and test gear.

210. *Electro-Medical.* British X-ray equipment is used in many of the leading hospitals and in the field for T.B. surveys. In the future there will be enquiries for other types of electro-medical apparatus, but in this highly specialised field the Mission recommends that no attempt should be made to sell such equipment unless first-class service can be provided by the manufacturer and his agent in the territory.

Road Transport

211. When considering Road Transport the factor of greatest importance is the improvement that has been made in the road system in recent years. For its further development a sum of £G.10m. is provided in the Second Development Plan just published. All the main roads are tarred and well surfaced and this has resulted in a considerable improvement to the life of vehicles. Despite this, however, it is doubtful if their life is much more than half of what it should be, due to the inadequate servicing and the shortage of trained mechanics. Overloading of vehicles is universal as in most other developing parts of the world.

Commercial Vehicles

212. These have been imported into Ghana at a reducing rate for the last two years, 5,375 in 1956, 3,630 in 1957 and 2,475 in 1958. The drop in the 1958 figures follows the pattern of "total" imports into Ghana which fell by about 20 per cent, mainly due to a drop in cocoa earnings in the previous year. During this period the import of British vehicles has fallen from 89·9 per cent to 75 per cent of total imports, whilst French vehicles have increased from 1·0 per cent to 13 per cent, and German vehicles from 9 per cent to 10 per cent. As a matter of interest it is noted that facilities are in course of completion in Ghana for the assembly and body building from panels for Bedford trucks which top the list of all imported commercial vehicles.

213. Bus services in the main centres of Accra, Takoradi, Kumasi and Tamale have in the past been operated by the Municipal Councils, but, as a result of increasing dissatisfaction with these municipal services, they have been recently taken over by the Government and are to be operated by a National Transport

organisation. This will require substantial quantities of new vehicles which should have been ordered in the past two or three years to replace those worn out. It is believed that following the visit of the State Secretary of Economy, Labour and Transport in the Hesse Government of West Germany, on the invitation of the Ghana Government in September last, certain far reaching proposals have already been submitted involving among other things standardisation on German vehicles. It was a point of criticism by Ghana officials that no such proposals had been submitted by British vehicle manufacturers. Ghana officials have emphasised that it is desirable for firms to take the initiative and not to wait for an invitation before submitting proposals.

214. British commercial vehicle manufacturers have supplied the great majority of passenger vehicles operating in the east, west and south of the African continent including those already supplied to Ghana. They have a unique experience of special local conditions and the exacting requirements which their vehicles are specially constructed to meet. The need for credit facilities, maintenance arrangements and for the training of personnel present no new problems.

215. Until the new era of independence two years ago the British manufacturer was able to think of Ghana broadly in terms of a seller's market, but since that date it has become abundantly clear that the character of the market has changed. To break with the traditions of the past is a normal sequence to the commencement of a new epoch, and what could be more natural in the spirit of change than the immediate desire to seek different products from different sources of supply? This is doubtless a passing phase, but in the meantime the British manufacturer will seriously jeopardise his long term interest in the market if he fails to detect and to fight competition from new sources of supply.

Motor Cars

216. During the past two years the number of new passenger cars and dual-purpose vehicles imported into Ghana has declined; 4,514 were imported in 1956, 4,483 in 1957 and in 1958, 3,690. The majority of cars sold are financed by official bodies and business houses for their staffs and it is unlikely that there will be any substantial increase in the immediate future. Over recent years German and French cars have taken a larger slice of the market of which at present German cars have 36 per cent, French cars 18 per cent and British cars 39 per cent. Large North American cars are suitable for the roads and in a tropical climate a large body gives added passenger comfort, but running expenses are high. They account for about 6 per cent of current imports. Most British manufacturers are now producing a new range of vehicles which are likely to regain a greater share of the market.

Tractors

217. Some 200 wheeled tractors, mainly British, and 71 tracklayers, mainly American, were imported last year. Considerable expansion of agricultural production is planned, and in a country with no draught animals this will inevitably mean more mechanisation in the long run. It is likely therefore that the market for agricultural tractors will increase steadily.

Bicycles

218. Imports of bicycles for 1957 were 25,373 and for 1958 were 12,458; these were mostly of British manufacture. In addition to complete bicycles there is a growing volume of imported bicycle parts for assembly, the value of which is

now not much less than the value of completed bicycles. The largest supplier of parts is Western Germany, followed by the Netherlands with the United Kingdom in third place.

219. In comparison with some other African States the numbers of bicycles on the roads seem small and it is possible that the recent improvement in road conditions and a rising standard of living may result in an increasing demand.

Ports

220. Ghana has two main ports at present, namely Takoradi and Accra. A third, Tema, will shortly be completed.

221. Accra is one of the original surf ports of the Gold Coast and 600,000 tons of cargo are handled annually in the surf boats, each manned by about a dozen men, which ply to and fro between the ships anchored a mile or so out from the shore and the extensive warehouses built along the shore. There are no quays with cranes to handle the cargoes; each package, some weighing up to 2 cwt., is carried to or from the surf boats over the sloping hard on the shoulders of the crew who paddle the boats.

222. Imported goods of all kinds come into the country by this method and a large proportion of the valuable export of cocoa beans is similarly dealt with. Well established though this system appears to be, it will inevitably decline with the opening of the new port of Tema now being built only eighteen miles away.

223. The port of Takoradi in the Western Region was built some thirty years ago when it became obvious that the facilties offered by the historic port of Sekondi, three miles to the East, could no longer handle the increasing tonnages of both imports and exports. Takoradi has in recent years handled as much as three million tons of cargo in a year, although this figure has declined slightly over the last two years. As a result of post-war extensions there are now six quayside berths and adequate moorings for ships of all sizes to tie up for lighterage service. Manganese ore and bauxite are loaded from special quays built for the purpose and equipped with automatic conveyors and loading gear. Oil tankers discharge direct into an oil tank farm situated at the Eastern end of the port. Cement clinker, imported from Europe, will shortly be unloaded at a new jetty, the construction of which is just about to start together with a factory for the processing of the clinker into cement.

224. The construction of Tema harbour is referred to in Chapter 4. It is now due for completion in 1960 and will provide four berths designed to handle up to one million tons of general cargo per annum. The design allows for a maximum of 20 berths to handle up to 5 million tons per annum. Modern dockside cranes are being installed with spacious sheds for the storage and handling of all types of imported and exported goods.

225. As an adjunct to the main port, a separate fishing port is being constructed which will provide a dry dock with slipways and workshops for the repair of the new fleet of fishing vessels now being built together with a completely new village to house the fishermen and the families.

226. The new town of Tema which will house the many thousands of workers to be employed in the new port and industrial area, is also referred to in Chapter 4.

CHAPTER 7

AGRICULTURE

227. Ghana is predominantly agricultural; nearly three-quarters of all Ghanaians gain their livelihood from farming or services closely associated with it. By contrast, the mining, timber, and quarrying industries—all relatively important among those which exist already outside farming—together employ less than 4 per cent of the adult male population. Of those engaged in agriculture about 70 per cent are concerned solely with growing food; about 24 per cent with the production of cocoa; and only 6 per cent with all other crops.

228. The broad agricultural pattern is determined very largely by rainfall. By far the most important area at present is the zone of about 15 million acres in the Western Ashanti and Eastern Regions with an annual rainfall of around 60 inches. Here, in addition to a large proportion of the food, the 4 million acres of cocoa are cultivated on which the whole economy of the country so largely depends. Between this and the coast to the South West is a smaller area of high rainfall which is capable of growing valuable export crops like rubber and bananas but which is still, in fact, very largely unexploited and unpopulated. Together these two areas make up the Forest Zone, covering roughly one third of the whole country, within which lie all Ghana's timber resources. Most of the rest of the country, including Northern Ashanti, the whole Northern Region, much of the Trans-Volta Territory, and the Accra Plain is semi-arid savannah or orchard savannah; farmed, if at all, on little more than a subsistence basis. For example, it has been estimated that the vast Northern Territory which has no industry and which, apart from a very small area of tobacco, is devoted entirely to food production, consumes itself 96 per cent of all it produces.

229. Among exceptions to this general picture may be mentioned the coastal strip in which, against a background of scrubland, a great variety of crops are grown on a small scale mainly for sale in the coastal towns; and the Lower Volta flood plains on which relatively simple irrigation is practicable, but not yet widely practised.

230. The semi-aridity from which two-thirds of Ghana suffers is the result of uneven distribution, rather than sheer lack of rainfall: even the driest parts get more rain in most years than do the main arable areas in Britain. But whether, as in the South, there are two rainy seasons or, as in the North, only one there is everywhere, and in every year, a long dry season when all streams and rivers, save only the Volta, dry up and when without supplementary water all annual crops die off. Partly for the same reason there is in general no animal husbandry; the keeping of cattle, if not prevented altogether by tsetse fly and other disease carrying insects, is either confined to the neighbourhood of the main river and the infrequent water holes which do not dry up, or is nomadic returning necessarily to whatever water is available in the dry season.

231. Except in very limited areas of the North there are no draught animals and no animal manures. Outside the experimental stations food crops are grown almost entirely in a primitive system of shifting cultivation in which everything from land clearance to harvest is done by hand. Small patches, generally, to be measured only in fractions of an acre, are cleared by cutting and burning during the dry season. Whether the crop is millet, maize, cassava or yams, the cleared patches are planted more or less at random just prior to the rains, harvested soon after them, and then abandoned.

Agricultural and Research Stations

232. The agricultural activities envisaged in the Second Development Plan originate for the most part in work already done, or in progress at agricultural and research stations. At present, there are four agricultural research stations: the West African Cocoa Research Institute at Tafo; and those maintained by the University College of Ghana at Nungua in the Accra Plain, at Kpong on the Volta, and at Kade. From now on all these, together with an Animal Husbandry Research Station not yet established, are to be among the agricultural responsibilities of the National Research Council.

233. The functions of Agricultural Stations which are under the Agricultural Division of the Ministry of Agriculture may be summarised as follows: to provide a base for district extension work; to investigate local farm practices and problems; to test and demonstrate new crops, varieties and methods; to investigate pest and disease problems and demonstrate measures for controlling them; and to multiply improved planting material for distribution to farmers. There are perhaps twenty Agricultural Stations with functions as wide as these, together with a similar number of "cocoa" stations specialising in cocoa and other tree crops. There are also a number of Veterinary Stations under the Animal Health Division of the Ministry. Additional stations are to be established while, alongside them, the Second Development Plan provides for the setting-up under the Agricultural Development Corporation of a series of demonstration farms. In the words of the Prime Minister: "The A.D.C.* will also establish a number of small demonstration farms of fifty to a hundred acres in various parts of the country, designed to show farmers the profitability of new crops and new methods. These farms will be run by agricultural assistants, under professional supervision, and will use only techniques and forms of capital equipment which are well within the reach of the small farmer so that he can feel at home on these farms. The prime object of these small farms will be purely agricultural education."

234. Leaving W.A.C.R.I. and the cocoa stations aside, it is relevant to note that all three agricultural research stations and some of the agricultural stations have been established quite recently, i.e. within the period covered by the First and Consolidation Development Plans. Some other agricultural stations have been active for over fifty years and, when first established, had necessarily to cover, each in its own locality, the whole field from research to what is now called "extension". In the light of present day requirements, the one or two comparatively new stations we inspected seemed to suffer from being conceived with something of the same wide horizon as the early ones. They had on hand too many different experimental activities for the staffs then available; and at the same time were trying to demonstrate so many different things that there was seldom an entirely clear lesson for the Ghana farmer to learn. The decision to

* Agricultural Development Corporation.

establish "demonstration" farms is an indication that the latter difficulty has been recognised already. At the same time to have three different kinds of station —research at one end, demonstration at the other, with agricultural stations doing something of both in between—each under a separate authority, seems unnecessarily complicated. Something of the kind may well be unavoidable during a transition period while present staffs are being re-deployed and new ones trained and recruited. In the long run, however, there must be more experimental stations—divorced altogether from extension activities—and to reorientate some of the existing agricultural stations may be the most ready-to-hand way of establishing them. Equally there are many known methods which could and should be clearly demonstrated to farmers without waiting for the new demonstration farms to come into active existence. Here, too, reorientation of existing stations may be the right course.

235. The above comment is not intended in any way as a criticism of the stations visited or of the men, some Ghanaian and some expatriate, who were running them. The stations were doing first-class work, and, in their comparatively short existence, had made quite remarkable progress.

Mechanisation

236. At present practically all the tractors used for purely agricultural purposes in Ghana, and the implements which go with them, are in the hands of the Research and Agricultural Stations. Although this equipment is used primarily for the work of the stations themselves, some stations also undertake a limited amount of contract cultivation for neighbouring farmers, while the Pokoase station maintains a small unit specifically for work of this kind on the heavy soils of the Accra Plains.

237. While, at first sight, anything like widespread mechanisation seems quite inconceivable in a farming system which is based almost entirely on tiny pockets of cultivation which shift annually and casually, it is difficult to see how otherwise the vicious circle of subsistence farming, to which a complete reliance on hand tools inevitably condemns the Ghanaian farmer, can be broken. He shifts his cultivations because with hand tools rough clearance of a small area, and the sowing of one food crop, is all that it is physically possible to accomplish in the time available. The secondary clearance and weeding, the sowing of rotation crops, and the manuring of one kind or another that would be necessary to establish even a small area permanently are quite beyond him, both physically and because there is nothing over, when he and his family have been fed, with which to pay for improvement of any kind. On the heavy black soil of the Accra Plain even to scratch the surface sufficiently to sow one crop requires too much effort, so that a large and potentially fertile area remains unproductive.

238. Again two major targets of the Second Development Plan—to raise the yield of cereals in the Northern Region, and to establish a cattle industry—depend, among other things, on the provision of dry-season water by building dams or digging ponds across the channels along which most of the rain now runs to waste. By making something like rotational farming practicable, similar measures would raise the whole productivity of all the semi-arid areas of Ghana. With the assistance of International Co-operation Administration (I.C.A.) expert work of this kind is being done already in both North and South.

239. Before making further comment on this it may be worthwhile to make a comparison with peasant farming in parts of Southern India that are not unlike

Ghana in soil, topography or climate. There, although the dry season is even longer and hotter, both winter and summer crops are grown regularly. This is because, wherever no other means of irrigation is available, every village has its "tank" to store water from the rains: perhaps only a few hundred square feet in area and dug by the villagers themselves with bullock-drawn scoops, or by hand with donkeys to carry off the soil. Alongside these today are much larger tanks dug with mechanical equipment to serve whole districts. Nevertheless, the fact that water was provided and crops grown in this way long before tractors and bulldozers were thought of is but one illustration of the kind of difference which even draught animals can make to a peasant farming economy. However —if, indeed, it could be done at all—to make draught animals a common-place in Ghana farming would take half a century; the only practicable alternative, and perhaps the only one which will keep enough of the younger generations on the land to provide food for a rising industrial population, is to find some means to make the services of small tractors and simple cultivating implements available to as many farmers as possible.

240. To return to the dams and ponds that are already being constructed on grander scale, it is no disparagement to say that wherever one comes into being Ghana would be better off for a hundred more widely distributed small ones, of a size which could be built or dug with an everyday tractor and earth scoop, even if the total water stored were less. But so long as equipment has to be brought in specially, the smaller ones will be uneconomical to construct: it is an essential point of the argument that the tractors must be everyday ones—there already for the everyday purposes of farming. To repeat the words of the Prime Minister already quoted, it is essential to use "techniques and forms of capital equipment which are well within the reach of the small farmer".

241. To make even the smallest tractors and simplest equipment economically available to the typical Ghanaian farmer is no easy problem. It will involve some form of co-operation: a fairly large group of farms with a separately organised pool of machinery: a smaller group owning and sharing the equipment; or perhaps the encouragement of one-man farmer-contractors. We know of many instances in other developing countries in which, through difficulties of management or usage or maintenance, earlier ventures of the kind have failed. At the same time we see no reason why Ghana should not be the first to succeed; and we see no reason why, perhaps by the secondment of carefully chosen men from the tractor manufacturing industry, the United Kingdom should not provide the expert assistance that such a venture will need and merit. In this connection it is worth noting that where the Pokoase tractor unit has been doing contract work, a more orderly and effective cultivation pattern—in contour strips rather than random patches—is already evident.

Agricultural Development

242. Two of the six priority targets mentioned in the Second Development Plan—cattle and cereals—have been mentioned already. As the plan itself indicates, both will need special measures like husbandry research, pest control, and the development of hybrid maize, for which immediate financial provision is being made. Otherwise these targets, and another which calls for the more general use of fertilisers, are mainly a widening and acceleration of the work already being done by existing institutions. Like mechanisation, if it proves practicable, the introduction of more cattle, the wider use of fertilisers and the achievement

of higher crop yields are all complementary means of breaking into the vicious circle of subsistence farming. With this in mind the suggestions already made that the alignment of research, agricultural and demonstration farms should be simplified, and a clearer distinction drawn between those responsible for finding out and those responsible for putting over, need to be emphasised.

243. The three remaining priority targets are to raise cocoa yields; to establish large areas of rubber and bananas in the wet South West; and to bring irrigation to the Volta flood plains. Since it is evident that, however well the rest of the Plan may progress, cocoa will remain the mainstay of Ghanaian economy for many years to come, the importance of raising cocoa production is obvious. Those of us who were fortunate enough to visit W.A.C.R.I. were most impressed by what has been done there to raise yields by the use of fertilizers and the control of shade; and by what has been done by both the Institute and the Division of Agriculture to combat capsids and swollen shoot. Fertilisers apart, the most ready-to-hand means of raising cocoa production is to replant the so-called devastated area, and perhaps some other areas, with the higher yielding and quicker bearing trees that W.A.C.R.I. has developed.

244. We had no opportunity to visit the areas on which it is proposed to grow rubber and bananas nor are any of us expert in these crops. However, some rubber is already being grown there while it is understood that commercial interests from outside Ghana are already looking into the possibility of establishing additional plantations. We therefore see no reason why, whether by the Agricultural Development Corporation or by private interests, the modest initial target of 10,000 acres of rubber should not be accomplished. Moreover since it has been estimated that there are 400,000 acres of potentially good rubber land in the area, it may well be worth while for British rubber interests to watch events closely.

245. The irrigation activities envisaged in the Development Plan are concerned mainly with what might be accomplished, without elaborate constructional works, in controlling the small creeks and streams through which the Volta flood waters advance and recede. Since this would enable potentially large areas of crops like sugar cane and rice to be grown, with consequent reduction of Ghana's food imports, we consider that the money provided for the hydrological survey, which is an essential preliminary, will be well spent. In the meantime much experimental work on the growing of these and other crops is in progress at the Kpong research station where, in particular, we saw excellent stands of sugar cane.

246. As an outcome of the above we understand that the establishment of rice growing farms, and perhaps similar enterprise for other crops, on a scale large enough for full mechanisation is being considered. We feel it right to offer the warning that for the most part ventures of this nature undertaken in countries unaccustomed to mechanisation of any kind have proved costly and unrewarding. We do so, however, not to discourage the whole idea, but to emphasise that large-scale mechanisation should be regarded as a supplement to the more modest possibilities that have already been outlined, and not as an alternative to them. The more widely simple mechanisation can be extended in the meantime, the more likely will be the success of large-scale farming.

Forests and Forest Products

247. Since the end of the war exports of timber from Ghana have steadily increased until she is now among the largest exporters of tropical hardwoods in

the world. There are over 20 different kinds of tropical hardwoods grown in Ghana. In 1958 log exports totalled over 27 million cubic feet, sawn timber 7·82 million cubic feet, and in addition there were also exports of plywood and veneers. The F.O.B. value of these exports was nearly £11 million.

248. The area of Ghana within which the commercial export timbers grow is only 30,000 square miles (one-third of the total area of the country) and the remaining forest within it is much less and is dwindling. It is therefore a question of whether exports at this level can be maintained.

249. In 1947 it was estimated that 16,900 square miles or 55 per cent were covered with forests: at the end of 1957 only 10,600 square miles or 33 per cent could still be classed as forest. None of this deforestation is due to timber exploitation; all is due to clearance for farming (mostly cocoa). If it could be arranged that all marketable timber was removed before clearance for farming, the wastage would not be so serious. Both farming and timber operations are entirely in private hands. The Government is now considering a bill aimed at conservation of forests to control the cutting of timber. The reserved forests are not subject to deforestation by farmers. It will be clear from the foregoing that unless the Government actively pursue and enforce a policy of forest conservation and regeneration, the prospects for a continuance of the present high level of exports are not good.

250. The forest products industries which we visited are on the whole making good progress, but with one or two exceptions production difficulties and management seem to be the main reasons for the failure of these new industries to make a profit.

Fishing Industry

251. The Second Development Plan provides for a considerable expansion of the fishing industry as fish in the absence of cattle forms the principal source of protein.

252. Fishing is at present almost entirely confined to line and net fishing by small boats and there is undoubtedly considerable scope for the expansion of the fishing fleet both in size and its field of operations. As is mentioned elsewhere, suitable boats for this purpose are being built in Sekondi.

Nutrition

253. Although apparently adequate in quantity, the traditional Ghanaian diet, in areas beyond the coastal regions, is considered by local health authorities to be deficient in protein and probably in vitamins. Local production of fresh meat is insufficient to meet requirements and prices are beyond the reach of the bulk of the population. Coastal fishing is on a small scale, and owing to the system of distribution returns to the fishermen are low, whilst retail prices of fish in up-country areas are high. Ghana is a large importer of food products, in particular of canned meat and fish. Through the Industrial Development Corporation and the Agricultural Development Corporation plans are under consideration for the organisation and expansion of the fishing industry, and for increasing the production of livestock in the Savannah areas.

254. The Ministry of Food has set up a National Nutritional Committee to investigate the nutritional standards of the community and this problem will also be studied by the Health Committee of the National Research Council.

255. In an earlier chapter reference has been made to the establishment of a cane sugar industry. One major difficulty with this in Ghana is that the population at all levels is at present accustomed to eat only highly refined white sugar. On both economic and nutritional grounds we consider that it would be worth while for the National Nutritional Committee to seek to encourage a taste for a less highly refined product, e.g. something akin to what in Britain is commonly called Barbados sugar.

CHAPTER 8

EDUCATION, TRAINING AND RESEARCH

256. The Mission concerned itself from the start of its visit with the problem of education, in particular with technical education and education for management. In our view education is a vital part of the Ghana scene, and because we feel that knowledge of the position in Ghana is essential to firms interested in participating in development there, we are devoting the final chapter of our report to this subject.

257. We were deeply impressed by the speed of development in the educational field and by the enthusiasm of pupils and teachers. Technical education is handicapped by a preference for arts subjects and for careers as white collar workers. Managerial careers are also hampered not only by lack of experience and training but also by lack of inclination. Political independence has so far been too short to eradicate the attitude of dependence on higher authority, bred of centuries of tribal life where decisions were taken by chiefs and elders, more recently followed by a tendency to look to government rather than to individual initiative for solutions of problems for which individuals should in fact accept personal responsibility. While much is being done to remedy these shortcomings, the Mission feels that it will be necessary to tackle them at the earliest stages of education. As far as technical education is concerned, this is hampered by the fact that children grow up in families and schools where the white collar tradition is strong and where there is an almost total absence of the mechanical toys, hobbies and ambitions among young children which we know in our own country.

258. The Second Development Plan envisages a total expenditure of £G.27,852,000 on education with a figure of £G.14,150,000 for immediate implementation. The bulk of these funds are allocated for secondary education (£G.15m. total plan, £G.7m. for immediate implementation) and in the short-term will be spent mainly on 34 new schools. Technical education is to be expanded considerably at lower levels to provide skilled workmen for industry and a field for the selection of students for more advanced technical training. The existing four Trade Schools and four Technical Institutes will be increased in number. The Trade Schools are to be reorganised at a slightly higher level of training and will be called Junior Institutes of which there will ultimately be twelve. The four Technical Institutes will be increased to six and will take on Junior Institute training until there are enough of these Institutes established. The total expenditure in this field is set at £G.1,960,000 with an immediate target of £G.1,500,000.

259. We found the examination service provided by the City and Guilds of London Institute was greatly appreciated by all concerned with the technical schools and colleges in Ghana. Students study a wide variety of trades and are examined to the same standards as are set in the U.K. In some cases the tests require revision to take account of the use of local materials which are available,

e.g. hardwoods instead of softwoods, and we understand that the Institute has this matter under consideration.

260. The prestige attaching to the qualifications in these examinations with their recognition throughout all parts of the Commonwealth is a valuable incentive, which is readily appreciated by the students.

261. The Royal Society of Arts in London also provide an examination service for students studying non-technical subjects.

262. In the field of higher education it is intended that in the course of the plan the present University College (Legon, near Accra) and the College of Technology (Kumasi) which has close links with London University shall become constituent colleges of a University of Ghana. The distance of some 200 miles which separates the two colleges will be a serious handicap to their co-operation and will not allow for the intellectual cross fertilisation provided by the community life of a university. University College at present caters for the faculties of Arts, Social Studies, Biological Sciences, Physical Sciences and Agriculture with the following Departments in operation:

Classics, English, Phonetics, French Studies, Philosophy, Divinity, Archaeology, History, Economics, Geography, Sociology, Law, Education, Mathematics, Physics, Chemistry, Zoology, Botany, Geology and Agriculture.

263. It also provides a course in business management which is supported by expatriate firms. There are plans later on for a medical school and pre-clinical medical studies. The ultimate target of expenditure for University College is £G.2,500,000 with an immediate one of £G.1,800,000 mainly on new building and equipment.

264. The College of Technology at Kumasi is to be expanded at a cost of £G.2,456,000 with an immediate target of £G.1,800,000 mainly to be expended on buildings, accommodation for staff and students, equipment and services. The U.K. Government has provided a fund of £G.350,000 spread over 3 years as an important contribution to the resources of this college. The college was established in January, 1952, and now has the following Departments:

School of Agriculture (4-year diploma course).
School of Architecture, Town Planning and Building (professional qualification).
Department of Commerce (professional course in Accounting, Secretaryship and Administration and a 2-year course in Estate Management).
School of Engineering (civil, mechanical and electrical for London University degree, professional institutions and college diploma).
Department of Fine Arts and Crafts (Diploma).
Department of Pharmacy (Diploma).
Mathematics and physics (B.Sc.(Eng.) and a course for pre-engineering students).
Science Higher School Certificate.

265. Apart from these bodies which will benefit from the Second Development Plan there are 38 private technical and trade schools which we understand are not all well equipped for their task. The following government departments also have their training schemes for staff both in Ghana and the United Kingdom:

Electricity Department.
Posts and Telecommunications.
Public Works.
Broadcasting.
Railways and Harbour Authority.

266. In addition the mines have their own training and apprenticeship schemes, the leading foreign firms (in particular the United Africa Company and Shell), have extensive schemes for Ghanaians in Ghana and in the United Kingdom and elsewhere covering technical training and management. They also contribute generously with scholarships to government higher education. Among Ghanaians studying abroad the majority, some 2,000, are in the United Kingdom. Of these 300 are on Ghana government scholarships, 800 on Cocoa Marketing Board Scholarships, some on grants under the United Kingdom/Ghana Technical Assistance Scheme and 900 on private means. It seems that some 80 per cent of the students are technical, managerial or commercial, or students of medicine or dentistry. Only 300 are registered as reading law which together with economics used to account for the great majority of students.

267. While these figures still show a strong inclination for careers as white collar workers for government service, the stress on technical and business studies is very encouraging.

268. We are happy to note that under the United Kingdom/Ghana Technical Assistance Agreement a scheme is being worked out for the setting up in the near future of a Technical Teachers' Training School at Kumasi which it is hoped to staff with personnel from the United Kingdom. This should go a long way towards providing teachers for the expanded programme of technical education which is more likely to be delayed by lack of teachers than by physical facilities.

269. There were in 1958 some 668,630 pupils enrolled in just over 5,000 educational establishments in Ghana. There were 2,826 full or part-time pupils in government technical or trade institutes, 424 at University College (Legon, Accra) and 536 at the College of Technology, Kumasi. As yet no engineer has secured a degree or professional qualification in Ghana though it is expected that the first engineers will qualify in the near future.

270. We had discussions with Mr. Nylander the Minister of Education and his staff and visited the University College, the Kumasi College of Technology and the technical institutes of Accra, Takoradi, Tarkwa and Kumasi. We were much impressed by the standard of buildings and equipment which bear comparison with the best in the most advanced countries.

271. Ghana's requirements for men with technical and managerial ability will eventually be supplied from her own training institutions, but in the period of building up the technical training establishments Ghana will look for considerable help from overseas and it seems very much in the United Kingdom interests that every effort should be made to assist in this direction. It is essential that any men sent out from the United Kingdom should, if they so wish, be free to return to their positions in the United Kingdom without loss of seniority or pension rights after a period overseas.

272. The B.B.C. has adopted this practice for some time with considerable success by seconding its technicians for a period of three years and its administrative staff for a period of five years. This co-operation between organisations in Britain and in Ghana has the mutual advantage of conveying direct knowledge

of local conditions to the home organisation, thus ensuring that Ghana's requirements are fully met.

273. As more Ghanaians of suitable calibre become available then more scholarships should be sponsored by British Industry and by both Governments in order to maintain and improve the close ties which exist at present.

274. It is recognised that the larger British firms both in the United Kingdom and in Ghana already offer facilities but it is equally in the interest of the smaller British firms to examine their own position and see whether they too can make a contribution to the pressing need for technical assistance in dealing with the new development plan.

275. It is worth noting here the great advantage which the United Kingdom enjoys as a result of the adoption of English as the official language of Ghana. The fact that we start by speaking a common language must have obvious advantages to this country in all its business with Ghana.

276. English is, of course, the first language taught in the schools and it is the only language used in the training and technical colleges. The wide use of English text books ensures that students become accustomed at an early age to the use of British methods and standards. The same applies to some extent to the use of American text books, which are also widely used. It is, therefore, essential to the interest of this country that British books of all types are made readily available to schools and libraries throughout Ghana.

Research

277. An allocation of £G.600,000 has been made by the Ghana Government for developing the activities of the National Research Council during the five year period of the Second Development Plan. This body was set up in 1958 to co-ordinate scientific, social, economic and industrial research in Ghana. Professor P. M. S. Blackett has been advising on its constitution and a secretary has been appointed under the U.K./Ghana Technical Assistance Scheme. The Prime Minister is chairman of the Council and of two of its committees which comprise five in all, agriculture, health, economic and social sciences, industry and general science and technology.

278. Ghana previously participated with Nigeria, Sierra Leone, Gambia and the United Kingdom in various West African research organisations under the co-ordination of the West African Inter-territorial Secretariat. It has been decided that, for instance, the West African Cocoa Research Institute (W.A.C.R.I.) will continue as before on a West African basis.

279. It would seem that the need in Ghana is not for fundamental but for applied research which can give very broad results of benefit to the economy. The mission was most impressed by its visit to W.A.C.R.I. and by the work being done by the West African Building Research Institute. The latter has only recently started operating by opening an office and experimental depot in Accra, where various materials are tested under local climatic conditions. The Centre is able to advise on the suitability and availability of many varying materials and products and should play a useful part in future construction work in Ghana. It is possible that later on institutes on the same lines as the above will be set up.

APPENDIX 1

Ghana's Trade Position

Direction of Trade

A. *Imports*	1938		1946		1956		1957		1958	
	Value £G.m.	%	Value £G.m.	%	Value £G.m.	%	Value £G.m.	%	Value £G.m.	%
Total, of which from:	7·87		13·22		88·84		96·57		84·60	
United Kingdom ..	4·29	54·5	8·43	63·8	41·67	46·9	40·74	42·2	36·66	43·3
Japan	0·28	3·6	—	—	8·96	10·1	10·30	10·7	6·78	8·0
Netherlands	0·16	2·0	0·32	2·4	7·36	8·3	7·95	8·2	7·13	8·4
Western Germany ..	0·45	5·7	—	—	4·51	5·1	5·32	5·5	4·83	5·7
U.S.A.	0·77	9·8	1·16	8·8	3·37	3·8	4·66	4·8	4·31	5·1
Upper Volta ..	0·01	0·1	0·02	0·2	2·29	2·6	2·18	2·3	1·63	1·9
Italy	0·12	1·5	0·12	0·9	2·03	2·3	1·85	1·9	1·27	1·5
France	0·05	0·6	0·09	0·7	1·53	1·7	1·68	1·7	1·55	1·8
Belgium-Luxembourg	0·11	1·4	0·17	1·3	1·27	1·4	1·74	1·8	1·33	1·6
South Africa ..	0·01	0·1	0·18	1·4	1·21	1·4	1·50	1·6	1·54	1·8
India	0·15	1·9	0·57	4·3	1·26	1·4	1·42	1·5	0·91	1·1
Czechoslovakia ..	0·14	1·8	0·05	0·4	1·13	1·3	1·41	1·5	1·32	1·6
Netherlands-W. Indies	0·29	3·7	0·55	4·2	0·76	0·9	1·16	1·2	0·76	0·9
Hong Kong	0·02	0·3	—	—	1·08	1·2	1·03	1·1	0·81	1·0
Canada	0·07	0·9	0·24	1·8	0·93	1·0	0·97	1·0	0·79	0·9
French Togoland ..	0·06	0·8	0·19	1·4	0·90	1·0	0·92	1·0	1·11	1·3
B. *Exports*										
Total, of which to:	11·43		20·30		86·60		91·60		104·56	
United Kingdom ..	7·51	65·7	10·49	51·7	29·95	34·6	34·18	37·3	37·83	36·2
U.S.A.	1·35	11·8	5·62	27·7	15·98	18·5	14·47	15·8	20·04	19·2
Western Germany ..	*0·79	6·9	—*	—	14·15	16·3	11·46	12·5	16·85	16·1
Netherlands	0·59	5·2	0·65	3·2	9·70	11·2	9·04	9·9	10·19	9·7
U.S.S.R.	—	—	0·39	1·9	2·05	2·4	6·25	6·8	0·38	0·4
Italy	0·05	0·4	—	—	2·47	2·9	3·83	4·2	4·54	4·3

* Trade with Western and Eastern Germany

Source: Monthly Accounts relating to External Trade of Ghana, December, 1958

Composition of Trade

A. *Imports*	1938		1946		1956		1957		1958	
	Value £G.m.	%	Value £G.m.	%	Value £G.m.	%	Value £G.m.	%	Value £G.m.	%
Total of which:	7·87		13·22		88·84		96·57		84·60	
Food	1·21	15·4	1·34	10·1	14·12	15·9	17·44	18·1	14·67	17·3
Beverages and Tobacco	0·48	6·1	0·92	7·0	4·25	4·8	3·92	4·1	3·73	4·4
Mineral Fuels ..	0·60	7·6	0·95	7·2	5·09	5·7	6·85	7·1	6·28	7·4
Chemicals	0·52	6·6	0·85	6·4	6·20	7·0	7·19	7·4	6·61	7·8
Textiles	1·38	17·5	4·06	30·7	17·49	19·7	19·90	20·6	14·70	17·4
Machinery—Electric..	Not available				2·31	2·6	2·38	2·5	2·45	2·9
Other than Electric ..					5·40	6·1	5·35	5·5	5·96	7·0
Transport equipment					9·40	10·6	8·77	9·1	6·77	8·0
Clothing					1·64	1·8	2·19	2·3	1·95	2·3
Footwear					1·08	1·2	1·31	1·4	0·92	1·1
B. *Exports*										
Total of which:	11·43		20·30		86·60		91·60		104·56	
Cocoa	4·54	39·7	9·49	46·7	51·06	59·0	50·87	55·5	62·32	59·6
Timber	0·08	0·7	0·94	4·6	9·47	10·9	9·93	10·8	11·00	10·5
Diamonds	0·55	4·8	0·62	3·1	7·92	9·1	8·98	9·8	8·66	8·3
Gold	4·84	42·3	5·58	27·4	7·49	8·6	9·79	10·7	10·60	10·1
Manganese Ore ..	0·91	8·0	2·26	11·1	7·04	8·1	8·99	9·8	8·64	8·3

Breakdown to show main suppliers to Ghana in 1958

	Main suppliers £G.'000	*Total imports* £G.'000
1. Meat and meat preparations		1,522
U.K.	121	
Argentina	545	
Denmark	343	
Australia	152	
2. Dairy products		1,411
U.K.	342	
Netherlands	860	
3. Fish and fish preparations		2,074
U.K.	54	
Union of South Africa	522	
Commonwealth countries in Africa	284	
Canary Isles	270	
Portugal	254	
French possessions in Africa	240	
4. Cereals		3,795
U.K.	267	
U.S.A.	1,920	
Canada	624	
Countries in Asia n.e.s.	590	
5. Sugar		2,276
U.K.	1,912	
France	193	
6. Beverages		2,105
U.K.	322	
Netherlands	1,190	
Eire	243	
West Germany	136	
7. Tobacco		1,626
U.K.	1,026	
U.S.A.	444	
Nigeria	147	
8. Mineral fuels		6,281
U.K.	583	
Netherlands West Indies	763	
Italy	627	
Iran	554	
Nigeria	487	
Trinidad and Tobago	445	
Canary Isles	467	
Countries in South America, American a/c	1,656	
9. Medicinal and pharmaceutical products		1,631
U.K.	1,253	
West Germany	167	
Union of South Africa	70	

	Main suppliers £G.'000	*Total imports* £G.'000
10. Oils and perfume materials		2,529
U.K.	2,284	
East Germany	106	
11. Rubber manufactures		1,894
U.K.	1,145	
West Germany	290	
Japan	125	
12. Paper, etc.		1,037
U.K.	706	
Norway	93	
Netherlands	56	
13. Textile yarn, fabrics and made-up articles		14,696
U.K.	3,366	
Japan	5,238	
Netherlands	3,792	
India	796	
14. Non-metallic mineral manufactures		3,827
U.K.	2,343	
Belgo-Lux	447	
West Germany	251	
Czechoslovakia	213	
Israel	129	
15. Base metals		2,696
U.K.	1,531	
Japan	375	
Belgo-Lux	341	
Union of South Africa	146	
West Germany	114	
16. Manufactures of metals		4,552
U.K.	2,860	
West Germany	598	
Czechoslovakia	268	
17. Machinery other than electric		5,964
U.K.	3,979	
U.S.A.	987	
West Germany	311	
18. Electric Machinery		2,453
U.K.	2,050	
West Germany	216	
Netherlands	65	
U.S.A.	51	
19. Transport equipment		6,771
U.K.	4,136	
West Germany	1,344	
France	558	
20. Clothing		1,947
U.K.	560	
Japan	445	
Hong Kong	353	

APPENDIX 2

Second Five Year Plan

Projects affecting the Constructional Industries

(*Source: Second Development Plan 1959–64, published by the Ghana Government*)

Industry. Types of Work	*Total Plan* £G.	*For Immediate Implementation* £G.
AGRICULTURE		
Veterinary School	9,750	9,750
Irrigation and Drainage Works	2,000,000	
Cocoa Stores, Transport and Drawing Office Building	45,000	45,000
Training centres Approx.	450,000	450,000
Roads	217,000	217,000
Forestry		
New Accommodation in bungalows, offices, laboratory and library over wide areas	241,600	164,800
Fisheries		
New stations and schools	86,000	86,000
Harbour Improvements	310,000	70,000
Co-operation		
(Co-operatives), New Offices, Bungalows and Training Schools (many small projects)	194,000	85,000
	3,553,350	1,127,550
INDUSTRY AND TRADE		
Ghana Commercial Bank	300,000	300,000
Diamond Market Building	50,000	50,000
Casino Project	450,000	450,000
Geological Survey		
H.Q. Accra	55,000	55,000
Other Building	45,000	45,000
Mines Inspectorate		
Offices, bungalows (scattered)	22,600	5,000
Mechanical Laboratory, Takoradi	63,000	
Labour Department		
New Offices, 8 sites	128,500	63,000
	1,114,100	968,000
ELECTRICITY		
Tema Power Station, including Plant	1,864,000	1,864,000
3 New Generating Stations, including Plant	409,000	409,000
Miscellaneous Offices, Stores, Housing	450,000	450,000
	2,723,000	2,723,000

	Total Plan £G.	For Immediate Implementation £G.
COMMUNICATIONS		
Roads		
New Roads and Improvements throughout 5 Regions .. .. (Including Banboi Bridge £500,000+ Nabogo Bridge £350,000 Yapei Bridge £450,000)	22,377,000	9,060,700
Barber Greene Surfacing	300,000	
Widening and Improving Trunk Roads through villages, etc, ...	500,000	350,000
Replacements of Bridges	300,000	300,000
New Plant including Crushing Plant	500,000	
Airports		
Reconstruction of Accra Airport (partly in hand at present)	2,664,000	2,664,000
Other works at Accra	189,000	189,000
Domestic Aerodromes and runways	480,590	480,590
Staff quarters and bungalows	18,000	18,000
Posts and Telecommunications		
New Post Offices, Telephone Exchanges, Workshops, etc.	1,064,000	531,000
Railways and Harbours		
New Stations, Stores, Workshops and Offices ..	1,840,750	755,000
Railway Lines	3,275,000	75,000
Cement Clinker Berth Takoradi (about to start)	242,000	242,000
Tema Harbour (under construction) Balance allowed	2,500,000	2,500,000
Transport Dept., Workshops, Garages, etc. ..	1,331,000	337,000
Nautical School	150,000	120,000
Meteorological Dept.		
New Stations, Offices, etc.	71,000	26,000
	37,802,340	17,648,290
LOCAL GOVERNMENT AND REGIONAL BUILDINGS		
Schools at Accra and other Development Centres	600,000	600,000
Administrative Buildings, widely scattered ..	2,060,000	960,000
Numerous Workshops, Residences, Bungalows, etc.	2,257,360	1,125,000
SOCIAL WELFARE AND COMMUNITY DEVELOPMENT		
Schools, Institutions, Courts, Staff Quarters, Training Centres	521,700	168,500
	5,439,060	2,853,500

	Total Plan £G.	For Immediate Implementation £G.
EDUCATION		
General		
Offices, Bungalows and New Schools	4,881,000	1,421,000
Secondary Education		
Work on New and Existing Schools	7,000,000	7,000,000
Technical Education		
New Institutes, etc.	1,664,100	1,264,100
Higher Education		
Further Building at Legon University College ..	2,240,000	1,570,000
College of Technology, Kumasi	1,783,000	1,450,000
	16,568,100	12,705,100
BROADCASTING AND INFORMATION SERVICES		
New Relay Stations, Training facilities, Offices, etc.	1,292,050	727,300
HOUSING		
Middle Income Rental Group	1,000,000	400,000
Lower Income —2nd Slum Clearance	2,000,000	750,000
Labourers' Quarters	4,000,000	1,000,000
Roof Loans (Rural)	1,000,000	500,000
„ „ (Urban)	1,000,000	500,000
Self Help Housing	2,500,000	1,000,000
Developed Sites	1,000,000	300,000
Tema Development Corporation		
Engineering Works in Communities, Oil Area and Town Centre	2,500,000	1,493,000
Chemu Lagoon Drainage	500,000	500,000
Completion of Tema Village (fishing)	500,000	500,000
	16,000,000	6,943,000
HEALTH, SANITATION AND WATER SUPPLIES		
Public Health		
Staff Hostels	1,505,000	1,505,000
School of Hygiene	80,000	80,000
Training School and Health Centres	1,830,000	830,000
New Hospitals	4,530,000	1,130,000
Korle Bu Hospital Accra	2,439,000	2,439,000
Mental Hospitals	1,130,000	600,000
Housing for Medical Staff	790,000	490,000
Office Buildings	55,000	55,000
Other Sundry Building Projects	470,000	256,000
Medical School	2,760,000	
Rural Water Supplies		
Minor Rural Supplies	180,000	120,000
Ponds, Dams, Weirs	500,000	150,000
Boreholes	2,100,000	475,000
Rural Piped Supplies	2,670,000	1,870,000
Small Piped Supplies	1,000,000	345,000
Extension to Rural Piped Supplies	510,000	180,000
Offices, Workshops and Housing	461,000	170,000

	Total Plan £G.	For Immediate Implementation £G.
Urban Water Supplies		
Staff Quarters	200,000	30,000
Waterworks Construction Plant	100,000	
Water Mains Distribution	300,000	
New Supplies		
Western Region	2,230,000	750,000
Eastern Region (including Accra and Tema)	5,340,000	1,734,000
Ashanti Region	400,000	120,000
Northern Region	630,000	370,000
Accra Sewerage	5,000,000	3,120,000
Korle Lagoon Drainage	1,000,000	500,000
	38,210,000	17,319,000
POLICE AND PRISONS		
Police		
Police Headquarters and College	232,800	232,800
Stations, Offices, Quarters and Workshops	4,511,580	3,184,590
Prisons	2,199,350	750,000
	6,943,730	4,167,390
MISCELLANEOUS		
External Affairs		
H.Q. Building, Accra	130,000	130,000
Public Works		
Sundry Works, on Accommodation Workshops, Depots, Quarries, Sea Defences, etc.	3,237,250	1,400,000
Construction Plant Hire Pool	500,000	
Supreme Courts		
Courts and Accommodation	407,900	407,900
Archives		
Buildings and Record Centres	188,000	95,000
Survey Dept.		
Offices, Quarters, etc.	338,850	100,000
Income Tax		
Offices, Quarters, etc.	80,000	50,000
Customs and Excise		
Offices, Quarters, etc.	465,000	165,000
Accountant-General		
Offices	35,000	35,000
Government Statistician		
Offices and Accommodation	52,000	19,000
Printing Department		
Stores	25,000	25,000
Special Projects		
Volta River Investigation	100,000	50,000
Registrar General, Offices, Accra	14,000	14,000
Conference Hall	1,000,000	1,000,000
Cabinet Offices, Ministerial Buildings	600,000	340,000
	7,173,000	3,830,900
GRAND TOTAL	136,818,730	71,013,030

APPENDIX 3

Ghana Government Assistance to Industry

Extract from "Industrial Promotion in Ghana" issued by Ministry of Trade and Industries, Ghana

Government Assistance to Industry

13. The Government of Ghana offers considerable assistance through its various Ministries and Departments and inducements, by legislative measures, to prospective businessmen and industrialists—local as well as foreign—to establish new enterprises in the country. These aids are listed hereunder:

Pioneer Industries and Pioneer Companies Tax Relief

14. Pioneer Industries are those industries which are not being carried on in Ghana on a scale adequate to the economic needs of the country and for which the Government considers there are favourable prospects for further development.

15. Pioneer Companies Tax Relief can be obtained (in accordance with Section 27 of the Ghana Income Tax Ordinance, 1948) by companies engaging in a pioneer industry if they:

(*a*) become incorporated in Ghana and are resident for income tax purposes, that is the control and management of the company is exercised in Ghana; and
(*b*) produce a pioneer product—as opposed to offering a service; and
(*c*) satisfy the Government that it is in the public interest to award them pioneer status.

An application form for pioneer status can be obtained from the Industrial Promotions Division.

16. "Tax Holiday" starts on the date when the pioneer company commences its trade or on its production day (i.e. on the day on which the Company produces marketable quantities of the particular product) whichever is earlier, and continues up to a maximum of five years, during which time it is entitled to relief from tax equal to the tax chargeable on the income in respect of its pioneer business.

17. After the tax holiday period a pioneer company is deemed to have commenced a new trade or business on the day following the end of its tax holiday period and the advantages which it then obtains are that capital expenditure incurred during the tax holiday period on assets used in its post-pioneer status business is treated as post pioneer expenditure for the purpose of granting capital allowances, and net losses incurred during the tax holiday period can be carried forward and set against post-pioneer status profits within the time limit laid down by the Ordinance, at present 15 years.

Company Tax (Non-Pioneer Status)

18. The general rate of company tax was reduced at the last budget from 9s. to 8s. in the £, and now compares favourably with any similar country in Africa. Companies incorporated outside Ghana, however, pay an additional sixpence in the pound on income not retained in Ghana, and there is a withholding tax of sixpence in the pound imposed on dividends and interest paid to non-residents by Companies incorporated in Ghana.

19. There are lower tax rates for smaller companies incorporated and controlled in Ghana on or after the 1st of April, 1954. These lower rates apply to companies where chargeable income and directors' fees have not in the past exceeded and do not exceed £G10,000 and which have not been formed to acquire the whole or any part of a trade or business previously carried on by another Company. The lower rates are as follows:

(i) where the issued share capital does not exceed £G10,000 and the chargeable income each year is under £G5,000, no tax is charged in the year the business is set up or in the following year; in every subsequent year, the rate is 4s. in the £G.

(ii) when the issued share capital is more than £G10,000 and its chargeable income each year is under £G5,000, the rate is 4s. in the £G.

(iii) where the chargeable income each year is between £G5,000 and £G10,000, 4s is charged on the first £G5,000, 5s. on the next £G2,000, 6s. on the next £G1,500 and 7s. on the excess up to £G10,000.

Customs Tariffs

20. Legislation has recently been enacted which will allow refunds of duty for materials used in local industries, which will present a further attraction to the long list of material and equipment which can be imported duty free now. Among the items at present allowed duty free entry are: advertisements, patterns and samples, asphalt bitumen and tar, empty bottles, pots and jars, building and bridging materials, coal, coke, charcoal and patent fuel, cordage and twines, gas cylinders, disinfectants and germicides, wire netting and barbed wire, fertilisers and manure, refrigerating plant and machinery, instruments for scientific purposes, lead in sheets, leather, lime of all kinds, machinery for electricity generation, marine, mining and dredging, industrial and manufacturing, railway and tramway, water boring and pumping and accessories, appliances and plant used exclusively in connection with the machinery, newsprint, oils and creosotes for wood preserving, diesel, furnace and gas oils, edible oil, packages and paper bags imported for packaging Ghana produced goods, poultry rearing apparatus, printed literary matter, printers' ink, provisions such as butter, cheese, infant food, lard, maize, meat, milk and cream, rice, salt, flour, dried fruit and vegetables, rectified spirits for drugs or laboratory use, seeds or plants, sodium compounds, animal feeding stuffs, structural material for electric power and lighting, vessels, boats and canoes.

Personal Tax

21. The low personal tax rate will be an incentive to persons who wish to recruit staff from abroad for employment in Ghana. An example of the personal tax liability is given below.

Salary per annum	Tax Payable			
	Single	Married	Married and 1 Child	Married and 2 Children
£G1,400	£G64	£G45	£G39	£G33
£G1,800	£G125	£G95	£G89	£G83
£G2,200	£G205	£G175	£G165	£G155
£G2,600	£G298	£G260	£G248	£G235

22. In addition further reliefs are allowed for life assurance payments, approved pension fund payments, payments to dependent relatives, payment of passage moneys and for wife's earnings.

Double Taxation Agreements

23. Prior to Independence in 1957 the Government had double taxation agreements with various governments, which it continues to recognise. These agreements do not reflect Ghana's sovereign status and at the moment a United Kingdom-Ghana double taxation agreement is in the process of being drafted. This agreement will reflect the suggestions made by the United Nations in general on such agreements.

Immigration Permits and Quotas

27. Immigration regulations require all persons not in possession of a passport showing them to be Commonwealth citizens to obtain a visa before they may enter Ghana. Visas may be obtained from the Ghana High Commissions and Embassies listed in paragraph 12 above or from the nearest British Consulate. Transit, visitors' or residential permits are issued on arrival in Ghana.

28. An allocation system applies in the case of commercial or industrial persons or businesses establishing in Ghana and intending to employ outsiders or "expatriates" on their staffs. Application for an allocation should be made in such cases to:

The Secretary,
Immigration Advisory Committee,
P.O. Box M.47,
Accra.

While the present intention is to employ and up-grade as many Ghanaians as is possible, yet, where executive, managerial or technical personnel are required from outside Ghana for a new venture, generous consideration is given to individual cases by the Immigration Advisory Committee. However, it should be noted that immigration applications to establish new retail trading concerns will not be considered unless there are most unusual circumstances.

Industrial Sites and Harbour Facilities

29. In order to assist incoming industrialists to acquire land and factory sites, the Government has plans for developing several industrial estates adjacent to or outside the main urban centres of Ghana. Two such estates have already been established at Accra and Tema, and a further estate, essentially intended for light industries, is to be constructed in Accra. Similar estates are intended for Kumasi, Sekondi-Takoradi and Tamale. These sites will be available for lease to industrialists for periods of 50 years in the case of light industries and warehouses, and 60 years in the case of heavy industries. A development charge, payable only once, is made to cover the cost of roads, drainage and other ancillary services.

Applications for sites should be addressed to:
The Commissioner of Lands,
P.O. Box 558,
Accra, Ghana.

30. Although it is the Government's policy to give priority to industrial concentration in the five afore-mentioned towns so that industrialists can take advantage of the economies which emerge when a large number of factories are sited together, nevertheless it is not intended that industries should be established exclusively in these towns. On the contrary, industrialists are invited to set up industries in such other rural areas as appear attractive to them. Furthermore it is the Government's intention to develop some twenty other rural centres, and industrialists will no doubt consider the claims of these centres in deciding where to site-up their establishments.

31. Special mention should be made of the industrial and factory sites available at Tema, a vast port and development project presently being completed eighteen miles east of Accra. While the emphasis has been on making modern harbour facilities available as the eventual chief point of entry to Ghana, an extensive area of 700 acres is intended for storage facilities, heavy industry sites and general services under the auspices of the Tema Development Corporation. Certain of the harbour facilities are coming into use, and it is anticipated that they will be in full operation by the end of 1960. Several large industrial sites have already been taken up with many others being presently negotiated. While plant facilities will be adequate to accommodate large-scale operations, medium-sized and light industries are also being considered. Enquiries should be addressed to the Tema Development Corporation, P.O. Box 23, Tema, or to the General Manager, Railway and Harbours Administration, P.O. Box 251, Takoradi, Ghana.

Printed in Great Britain under the authority of Her Majesty's Stationery Office
by The Curwen Press, Plaistow, London, E.13

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BOARD OF TRADE

Report of the United Kingdom Trade and Industrial Mission to GHANA

March 1959

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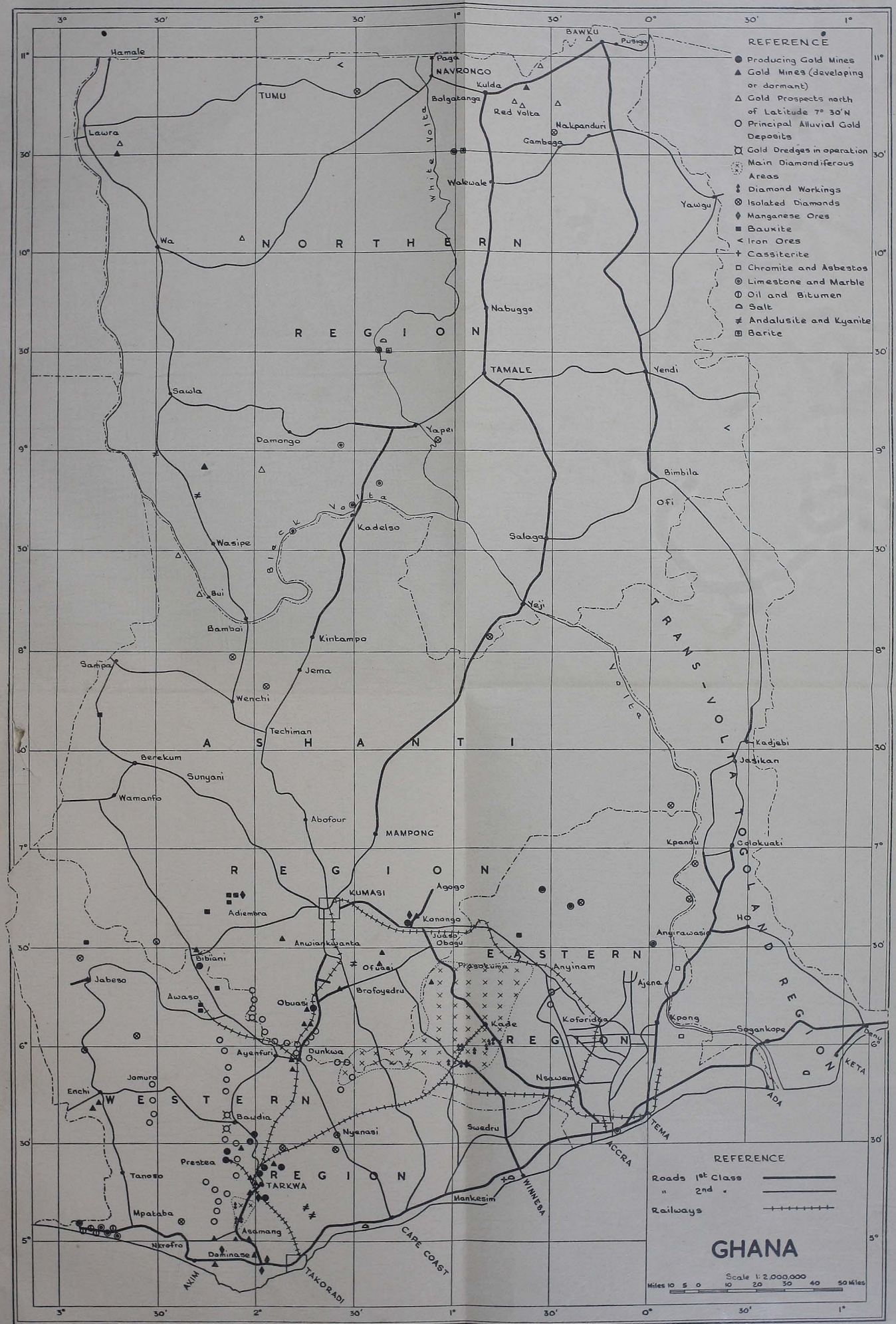
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Gold Prospects north of Latitude 7° 30'N
Principal Alluvial Gold Deposits
Gold Dredges in operation
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Diamond Workings
Isolated Diamonds
Manganese Ores
Bauxite
Iron Ores
Cassiterite
Chromite and Asbestos
Limestone and Marble
Oil and Bitumen
Salt
Andalusite and Kyanite
Barite
NORTHERN REGION
ASHANTI REGION
TRANSVOLTA VOLTA REGION
EASTERN REGION
WESTERN REGION
GREATER ACCRA REGION
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Pusiga
Hamale
Paga
NAVRONGO
Kulda
Bolgatanga
Red Volta
Nakpanduri
Gambaga
TUMU
Lawra
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Yawgu
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TAMALE
Yendi
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Ofi
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Sunyani
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MAMPONG
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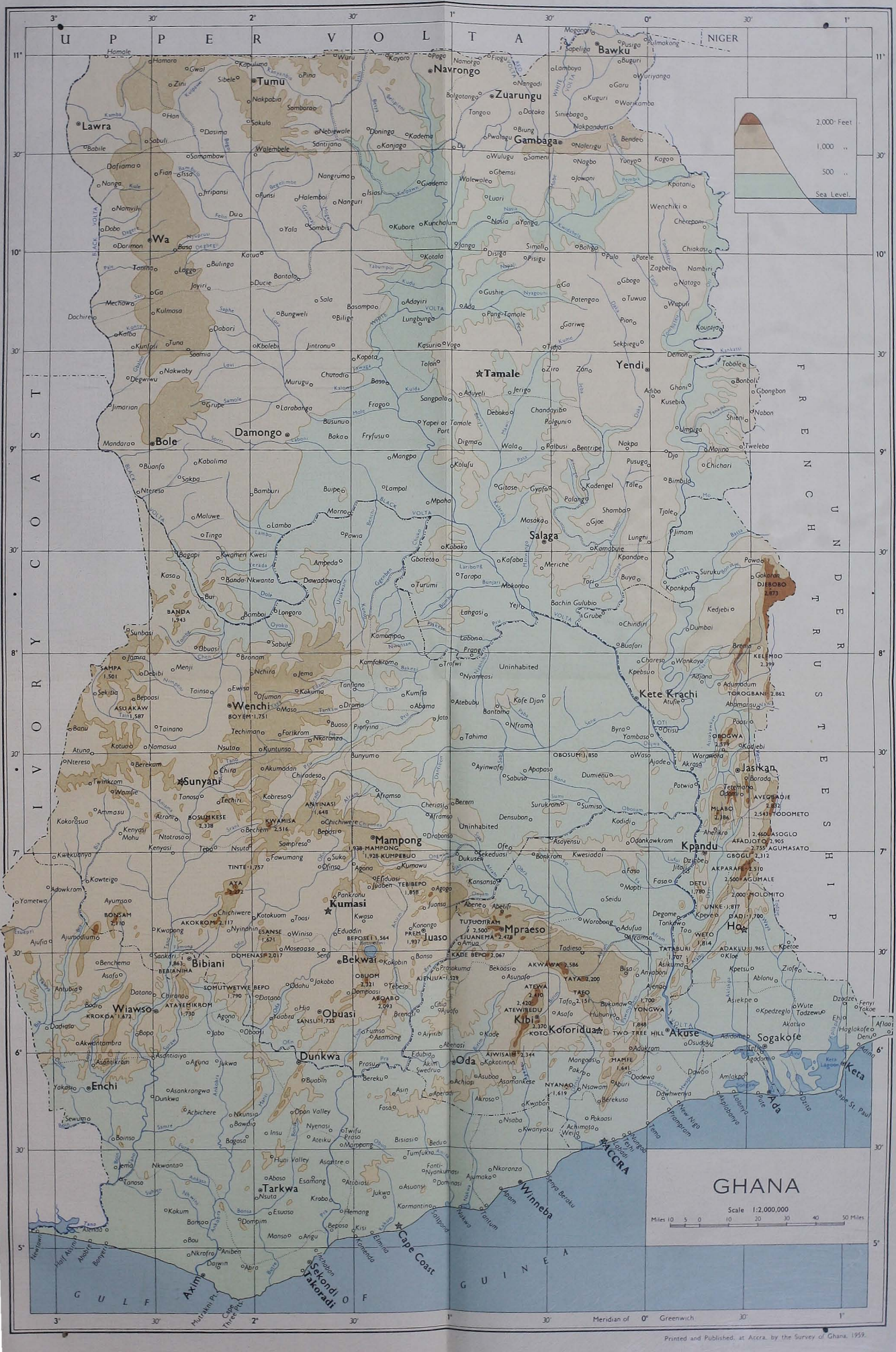
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Kete Krachi
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ACCRA
Printed and Published, at Accra, by the Survey of Ghana, 1959.