THE NATURAL RESOURCES OF THE GOLD COAST

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"A COUNTRY" said the great French geographer, Vidal de la Blache, "is a reserve of energies whose origin lies in Nature, but whose development depends upon Man. It is Man who, by moulding the land to his own purposes, brings out its individuality. He establishes a connection between its separate features. He substitutes, for the incoherent effects of local circumstances, a systematic concourse of forces. It is thus that a country defines and differentiates itself and finally becomes as it were, a medal struck in the effigy of a people".

A historian once said to me: "Look at the tremendous strides made by the United States within the last 100 years. The Red Indians had lived there for countless generations, but what did they do about the development of their mines and forests and agricultural resources?" It is clear therefore, that it is not enough to have the natural resources. We must also have people capable of developing them. This brings us to a consideration of our natural resources, and we can later ask ourselves whether we have got the people capable of carrying out the development, and if not, what we must do about it.

We may consider our subject under the following headings—Geology, Natural Vegetation and Climate, Agriculture, Fishing, and the possibilities there are for the development of Local Manufacturing Industries.

Let us take first our geology i.e. the solid

crust of the earth found in this country. The materials forming the crust may be divided into three classes. First, what are known as igneous rocks, or rocks that have solidified from the molten state, associated with which are minerals such as gold. Second, are the metamorphic rocks or rocks which have been formed by the changing of pre-existing rocks either by heat or pressure or by both. These together with the first class of rocks give us some of our best building stones, whilst the third class of rock known as the sedimentary which is formed from particles of other rocks contains in certain areas deposits of alluvial gold. It is from the disintegration of these three classes of rocks that the soil in which plants grow and economic crops are cultivated, is formed. The varying depth and fertility of the soils of this country are in part due to the nature of the parent material from which the soils have been derived.

The Gold Coast may be broadly divided into three geological provinces—the west and south-west from which come our exports of gold and manganese; the south-east which lacks minerals of present economic importance; and the centre and east from which bauxite or aluminium ore and limestone may be obtained.

Apart from gold, diamonds, and manganese, what else does our geology offer us? Throughout the hill country of the Gold Coast, and many parts of the gently rolling or almost level tracts of the country are many types of igneous and metamorphic rocks such as granite, gneiss, and quartzites which are durable and beautiful building stones. For the manufacture of lime and cement, we have the limestones and white marble of the Kwahu

plateau, and for the production of fine pottery, there are clay shales found on the coast, and in many other parts of the country, often forming land which is of little agricultural value. Besides their use in pottery, these clays, together with the shales and slates found in this country in large quantities may be utilized in the manufacture of bricks and tiles—tiles which can be produced on a large scale to provide us with roofing material which will at the same time be more beautiful, more durable, cheaper and healthier than the corrugated iron sheets on which we so much depend today. The establishment of factories for the manufacture of bricks and tiles will also provide employment for large numbers of boys passing through our primary schools—boys who must be saved from becoming a class of disillusioned young men for whom employment is uncertain.

In certain parts of Ashanti and the Northern Territories, the dry season is accompanied by more or less acute water shortage. Running water cannot be obtained as the watercourses are dried up. But enormous quantities of rain-water lie hidden in the crevices of the great sandstones and shales series of Ashanti and the Northern Territories awaiting to be tapped to serve the needs of man.

Then there is the less pleasant aspect of our geology. Records tell us that ever since the seventeenth century, this country has had occasional reminders that the crust of the earth here has not yet completely settled down. Less than a year ago,[1] this country experienced the second and more severe earthquake of this century; but

[1] The Accra Earthquake of 22nd June, 1939.

who knows what may happen in the future? You will remember that the houses which suffered most damage during the last earthquake were those that were of faulty construction, or were in bad repair. We have had our warning, and this should guide us in our building and other constructional work in the future. There is of course no need to be unduly alarmed. We are now living in one of the quietest periods as far as earth movements are concerned. The Akwapim Hills, the Kwahu Scarp, indeed the whole country bears marks of more violent earth movements in the dim past—in ages long before man set foot on this earth. And it is the after-effects of these earth movements that we experience in our earthquakes today.

There was a time when the site of the Akwapim hills was occupied by a trough into which the rain and rivers washed vast quantities of sand, silt, and clay. These grew in thickness until the beds were pushed up to form the fold mountains we have today. The folding movement was accompanied by the cracking and dislocation of rock masses, while molten matter from the interior of the earth welled up to change the character of the original rocks with its heat, and to give us some of our best building stones. Cracks in the earth's crust along which movements take place are known as faults, and the grinding friction which goes with the slipping of the rock masses is transmitted through the surrounding rocks in the form of earthquake waves which we feel as tremors. It is the passage of these earthquake waves that rocks our houses and causes alarm in us. The earthquake of 1906 is believed to be due to a movement along a fault that runs along the eastern edge of the Akwapim Hills.

The Kwahu Scarp is another evidence of earth movement in this country. Here, a great big crack developed, and the mass of land on one side of it was either let down or pushed up. A third type of movement that took place was the uplift of the country south-east of the Akwapim Hills. This area was once completely under the sea, and the Akwapim Hills formed sea-cliffs which were lashed by the waves of the Atlantic. Today, the sea has left the land, and the old islands now form the isolated hills of the Shai plains. The coastal plains have now become gently rolling owing to the carving out of valleys by the numerous streams that drain into the sea or lose themselves in the coastal lagoons.

But why was Accra so badly shaken during the recent earthquake? The town is situated in a fault basin that has since been filled in by several layers of different rocks, forming as it were, something like a pack of cards. Naturally, when the earthquake waves were being transmitted through the rocks here, they were more violently shaken than those areas of more compact and massive rocks uninterrupted by faults.

There are yet other ways in which our geology affects us. The large lagoons in the extreme east and west of the country were formed by the blocking of river mouths and the ponding back of the water on to the land. During the dry season, the shallower lagoons become dry and their floors are covered with salt. With a better organised exploitation, south-east Gold Coast will be capable of supplying the country's salt requirements, and imported salt will be eliminated.

The very structure and arrangement of the uplands and hill ranges exercise a profound influence on the distribution of rainfall in this country. The Kwahu scarp plateau plays the double role of forcing up the rain-bearing winds which come from the south-west to give up their moisture to the forest areas, and of forming a barrier against the dessicating winds from the north. In the same way, the deficient rainfall of the north and the south-east may be explained partly in terms of the structure of the country. In most parts of the coast, wave erosion is repaired by silt brought by the littoral currents, but, in the Keta district, owing to the trend of the coastline, material carried by these currents is transported off to sea, and the present plight of Keta is due to lack of material to repair the ravages of the breakers.

We now leave the rocks to consider our Natural Vegetation and what it offers. The importance of the study of natural vegetation to the economic geographer lies in the fact that the natural vegetation is a guide as to what economic crops are naturally suited to the areas covered by the various types of natural vegetation.

Our forest zone owes its existence to the combination of great heat and constant high humidity found in the region ; and an interesting feature of our forests is that the great trees are found in tiers, some rearing their heads to upwards of 120 feet, while others reach their crowns at 100 or 80 feet with varying amounts of undergrowth, epiphytes, and climbers struggling to bathe in the streaks of sunshine that pierce through openings in the foliage of the giant trees. Our timber in-

dustry has been based on the exploitaton of some of these forest trees, but, owing to the way in which stands of a valuable commercial tree may be scattered through trees at present little required in the timber markets, exploitation is more difficult ; and is it too much to hope that areas of the forest zone at present denuded of their natural vegetation through shifting cultivation may yet be planted with stands of valuable timber of the same species and bequeathed to the coming generations ? Cocoa and Kola, being tree crops, have found their natural home in the forest zone of this country, but rubber, for which our conditions are suitable, has unfortunately been neglected.

With the decrease in rainfall away from the forest zone, the closed forest gradually gives way to areas of grassland dotted with trees, and, where the country is traversed by rivers, we have fringing forests marking the presence of adequate supplies of water. The trees of these savanas are less dependent on the high humidity of the forest areas, and among them is the shea-tree. Where the rainfall is still less, and underground water is lacking, grass with clumps of bushes supervenes. Here, in the savana and grass areas, nature points to the cultivation of grass and bush crops of economic value such as maize, groundnuts, and, where the soil is deep, cassava and yams.

This brings us on to agriculture which we may consider under its two branches of arable farming and animal husbandry. Under arable farming, we have cash or export crops such as cocoa, the oil palm, and the coconut ; and food crops grown essentially for home consumption such as maize, cassava, sugar-cane and plantains.

Let us take first the cocoa on which the Gold Coast African today depends for his prosperity, leaving aside gold which can hardly be considered the mainstay of the African although, by 1938, it had surpassed in value the exports of cocoa.

Our cocoa farmers are beginning to be concerned not only about the low price of cocoa compared with that of former days, but also about the future of the cocoa trees themselves and their yields. This is a serious matter and needs some consideration. The cocoa tree, as was mentioned earlier, finds its natural home in the forest region where it belongs to the lower tiers of the forest. It requires great humidity, deep soil for its long roots, and protection from strong sunlight and from wind. Now, owing to deforestation for purposes of shifting cultivation, the forest trees whose foliage keeps off the sun's rays and maintains the right humidity of the atmosphere surrounding the cocoa tree, are being cut down. The cocoa tree is exposed to drying winds, and the soil which is now exposed directly to the torrential rains of our latitudes is rapidly washed away—the soil is no longer deep enough for the long roots of the cocoa tree, and the trees begin to wither. Thus apart from the care from insect pests and fungoid diseases, our cocoa farmers are now faced with new problems which they have unknowingly for the most part created for themselves.

So much for the cocoa tree. Now about the cocoa beans prepared for export. The Gold Coast receives less money for an equal weight of its cocoa than some of the West Indian and South American producers, and our premier position in the cocoa market is mainly due to the large quan-

tity of cocoa which we produce. The need here is to make use of boys with secondary school education who have had some training in agriculture to supervise the preparation of cocoa and advise the illiterate farmers in their own district as to the best means of preparing their cocoa. A little more expert guidance will improve the quality of our cocoa and secure for the farmers a higher price in normal times.

It will be a fatal mistake to say that because the price of cocoa is falling, we should therefore not put all our mind and energy into maintaining the standard of quality now reached or improve upon it. In these days of overproduction in primary commodities, the Gold Coast farmer might as well concentrate on producing cocoa of the highest possible quality rather than on extending the area now under cocoa.

In the Gold Coast, there is a stretch of country lying just south of the forest area which is occupied by a belt of oil palms. Some of you will remember that before the coming of cocoa, palm oil and palm kernels occupied a prominent place in our exports. Today, the oil palm industry has been allowed to recede into the background. The warning that we should not concentrate too much energy on the production of predominantly one export crop was unheeded. Now it will not be easy to prop up our dying oil palm industry. What used to be termed in Nigeria "the Sumatra menace" has come to our doors. Owing to scientific management, careful selection of oil palms, development of transport facilities, and good the reputation of the Sumatra producers, this country cannot compete successfully with Sumatra in the palm oil

market. But instead of felling our palm trees for palm wine, we can tap them as is done in parts of Nigeria and still have the palm trees to give us palm nuts and kernels from which oil required for home consumption can be obtained.

In the Northern Territories, a lot more could be made of the shea-nut tree. The fruit must be protected against destruction by the seasonal burning of grass. The shea-butter that is produced today forms only a small portion of what can be produced if more of the fruits were left to mature and collected for the production of shea-butter.

Today, this country produces maize or corn only in small quantities and yet demand for this cereal is great and is increasing. We have in the coastlands and in the plains east of the Kwahu plateau, extensive areas suitable for the cultivation of maize, and more intensive cultivation of this crop will in a measure eliminate the great fluctuations we at present experience in the price of maize. It may become less dear, and more money will be left over from what we at present spend on maize to use in the purchase of other commodities. But we must learn to control the locust more effectively. Large areas of potential maize fields are also suitable for the cultivation of groundnuts especially where the soil is deeper and more friable.

In face of our large imports of rice, attention might be drawn to the fact that apart from swamp rice which is grown in the wet south-west corner of the Colony, upland rice which requires less moisture may be profitably grown in parts of the Volta valley and along streams which over-

flow their banks during the wet season covering large areas of the countryside with still water for long periods each year.

Possibilities for wheat production also need to be investigated. Our Northern Territories have climatic and soil conditions similar to those of Northern Nigeria where wheat growing has been tried. Considering the large amount of wheat bread consumed in the southern parts of the country and our utter dependence on overseas sources for wheat flour, and the great achievements of agricultural scientists and plant breeders in producing varieties of wheat suitable for regions where wheat growing was formerly thought to be impossible, experiments in wheat growing in the Northern Territories may be hopefully tried.

Then there is the question of sugar. This country now produces some fine sugar-cane, and there are many parts of south-east Gold Coast especially around the lagoons and creeks, where sugar-cane production can be increased many fold and attempts made in the production of sugar in this country. Apart from sugar, molasses will also be obtained and a ready market found for it in this country without thought of seeking external markets.

We now turn to animal husbandry, that branch of our agriculture at present most neglected. We already have some cattle, sheep, goats, pigs and poultry to start with. The problem is to have more and more of these, and at the same time evolve better breeds, if possible by the introduction of new blood from other countries. A lot has already been done in this respect in parts of South and East Africa, and the same initiative is

required here. The greater part of this country is grassland with scattered trees and pastures which can be supplemented by fodder crops. For cattle, an extension of the area under maize may make possible the use of young fresh maize stalks for fodder, and various cattle foods may also be made from cassava, and as by-products of the coconut and oil palm industry. Apart from the rearing of cattle for meat, there are possibilities for the dairying industry.

The brisk nature of the trade in imported pigs' feet is a sign of the scarcity of good pork supplies in some of our important local markets. In a number of our big coast towns especially in the neighbourhood of Accra where cassava farms are common water is abundant, and waste fish is not difficult to obtain, the growth of a large scale pig rearing industry to supply the needs of these large consuming centres should prove a success. Here again, an increase in our maize production will give us a valuable pig fattening stuff. Pigs reared in this country have been used in making ham and bacon, and vigorous enterprise along these lines is necessary.

Throughout the entire coastal lowlands and the Northern Territories, poultry keeping can be carried out, and the dependence by a considerable section of our community on imported eggs is a challenge to the people of this country.

The great handicaps to the expansion of our livestock industry are those of water-shortage and the deadly tsetsefly. Much preliminary work has already been done on the subject of water supplies in areas of water-shortage, and possible well sites

have been suggested. We now await the actual boring of the wells and water holes. With regard to the tsetse-fly, two large areas of the country, one in the north, and the other in the south-east, are happily fairly free from this insect, but war on the tsetse must go on relentlessly until still larger areas of the grass and savana regions are freed from it.

There is not a single country in the world where adverse factors in the geographical environment have not presented themselves. Other countries have their own special problems which they have attempted to solve with varying degrees of success, and we must begin work to solve our own problems, especially those facing our agriculture. We might well learn from the achievements of Danish agriculture where co-operative effort, a high standard of education along the right lines, and an enthusiastic government have made a highly civilised and prosperous nation out of a country which is deficient in most of the natural resources which we possess.

Now let us turn to the sea. Here we are faced with the ravages of the waves and the partial destruction of at least one of our historic towns. But from the economic point of view, the sea is the basis of our fishing industry. The problem here is that the supply of fish is not regular throughout the year, and that during the big fishing season, much fish goes to waste owing to lack of effective means of curing, distribution and marketing. As most of our fishing is done close to the shore, fishing operations are hampered during times of heavy surf, while possible fishing sites are rendered useless by the presence of rocks close to the shore.

To overcome these difficulties, better and larger fishing vessels run by motor, if possible, are required, and an increase in the number of our deep-sea fishing fleet. Improvements in the transport system between the coastal fishing villages and the consuming centres of the interior, reports of market conditions in various parts of the country, and education in improved methods of fish curing will put our fishing industry on a sounder basis. It may even be possible to employ refrigerator cars in the distribution of fresh fish throughout the country. Similar improvements can also be carried out in our lagoon and river fishing industry.

We have now considered possibilities for the development of our primary industries, and we now turn to consider how far these may be used as a foundation for the development of manufacturing industries in this country.

Attention has already been drawn to our clays, shales and limestones, and the possibility of utilising them in the manufacture of earthenware of all sorts, pottery, tiles, bricks, cement and lime. Our forests contain both hard and soft woods suitable for furniture making, as indeed we see in locally made bedsteads, tables and chairs, and our soft woods may be found suitable for making packing cases and paper. The oil palm yields the raw materials for the production of various grades of palm oil, industrial alcohol and pinoleums; the coconut palm, animal feeding stuffs, coconut oil, door mats, and carpets; the shea-tree, shea-butter for the manufacture of pomades, ointments, and various other products of medicinal value; and our citrus, fruit juices and marmalade. From the sugar-cane we can obtain our sugar and molasses.

Possible manufacturing industries in connection with our livestock industry are the manufacture of various types of milk, butter, cheese, and meat extracts, the production of more and better sandals, shoes, and boots from home-cured leather.

Industrial development in this country will be faced with the question of power supply. We have neither oil nor coal, and we cannot rely on the Enugu coalfield of Southern Nigeria owing to the poor quality of the coal. Other countries such as Switzerland, Norway, and Sweden have turned to water power owing to their paucity in oil and coal. We can also do the same, although our water power resources may not be as great as theirs. In a report by Sir Albert Kitson, the late Director of our Geological Survey, we read: "The development of a great supply of hydro-electric power on the Volta River near Ajina would make possible the electrification of the entire railway system of the country, as well as of works at the principal mines, and for various industries that may be developed in the future." Nor is this all, as the smaller rivers of the country also offer possibilities for hydro-electric power development in other parts of the country.

These developments of our economic resources will not only create employment for our young men and women as well as raise our standard of living, but they will also give us a more balanced economy, save us from some of the ill-effects of trade depressions, and make possible an increase in our population. By way of contrast, it may interest you to know that the Gold Coast i.e. the Colony, Ashanti, the Northern Territories, and Togoland under British Mandate, is about the

same size as the United Kingdom, but our population is only 3½ millions and that of the United Kingdom is about 40 millions. As far as national income is concerned, there is no comparison whatever. Japan gives us an excellent example of a country which has pursued its economic development with great energy and has risen in less than a hundred years from a backward state to the rôle of a first class power.

In conclusion let us review very briefly, our major geographical regions and their economic resources. The Gold Coast may be broadly divided into (a) the coastlands, (b) the forest belt, and (c) the north. In the coastlands we have coconuts, oil palms, cassava, various citrus fruits, and the home of the fisherman, weaver, and trader; the south-west is famous for its rice, and the south-east is noted for its salt, onions, cotton, cattle, sheep, goats, and poultry. The forest-belt is the home of the farmer and the miner, the source of our cocoa, kola, rubber, and various foodstuffs. In the north, we have the farmer, and the keeper of cattle and poultry, a future source of more of the country's meat, shea-butter and cotton.

The interdependence of all three regions is clear, and for more effective co-operation, our main railway lines and trunk roads must be supplemented by more and better branch roads, and by the improvement of our river navigation by the blasting of rocks where navigation is impeded by rapids; by the dredging of the river estuaries where necessary, the reinforcing of the banks, and the building of better river ports. The great port of Glasgow on the Clyde, is a testimony to what man can do to improve harbour facilities where natural

conditions are not altogether favourable. The foregoing suggested improvements will ensure rapid distribution of perishable goods, and lower rates of transport for bulky commodities; greater and more intimate contact between the various peoples of the country will be fostered, and an effective means of uniting the people of this country will thus be found.

We have had a glimpse of the Gold Coast, its surf-beaten coastal lowlands, its lagoons, fishermen and traders; the folded Akwapim ranges, the Kwahu scarp, and Ashanti uplands for the most part under forest, and inhabited by lumbermen, miners and cocoa growers; the northern plains dotted with shea-trees, their cattle and poultry kept by the industrious but less articulate of our countrymen.

We have also considered possible lines of development; but the progress of development will be speeded up or hindered by the body of thought in this country, as well as in Great Britain, on the relevant issues raised by current religious, social, economic, and political ideas. We can only pray for greater imaginative foresight, energy, and understanding, and above all for the spirit that is not self-seeking but concerned about the greater happiness and well-being of others.