URING the past few years, while decision regarding federation of the British Central African territories lay in the balance, discussion along economic lines was largely concerned with the arguments for and against such federation. But, because the political implications appeared to be of such overweening importance, as they may well continue to be now that the decision to go forward has been reached, even the economic base for federation was not thoroughly analyzed and debated.

The most frequently stated proposition in favor of federation was that the three countries—Northern Rhodesia, Southern Rhodesia and Nyasaland—were economically interdependent. The more important examples of this complementary position were given as: the supply of Southern Rhodesian coal from Wankie to the great Copperbelt of Northern Rhodesia; the migration of labor from Nyasaland and Northern Rhodesia to the farms, mines and industries of Southern Rhodesia; the supply of cotton from Nyasaland to Southern Rhodesia and the subsequent sale of cloth and clothing to Nyasaland and Northern Rhodesia; and, finally, the dependence of Northern Rhodesia on the rail line through Southern Rhodesia and this line's complementary need for the mineral traffic from its sister country.

Those opposed to federation have tended to minimize the importance of intraterritorial dependence, pointing out that internal trade among the three countries was only about 5 per cent of total trade. Furthermore, it could logically be argued that such intragroup trade could easily be continued and expanded under trade agreements without any political federation. The proposition that joining would, through greater diversity, reduce vulnerability to a depression was countered by the suggestion that such a depression would probably affect all commodities, and that the benefits of diversity were thus exaggerated.
An argument of some cogency supporting federation was that the greater size of the unified area would make it more attractive to foreign investors, particularly to Americans. It was also pointed out that long-term savings would result from the unification of a number of governmental functions. Most of the economic and physical problems of the area are common to all three countries, so that centralized research is undoubtedly desirable, while administration of such activities as forestry, geological surveying, fisheries development, and so on, could well be more closely coördinated.

Possibly the most telling point in favor of federation, and one that was surprisingly little used, was that, under federation, the area would tend to be developed as a unit whereas, lacking cohesion, each country would tend to go its own way, often with unnecessarily competing activities. Particularly in the field of transportaion is there need for planning on a broader base, and the multi-purpose development of the Zambesi River, the boundary between the two Rhodesias, provides an obvious case where unified action will be required.

II

Now that federation has been decided upon, there is need to take a broader look at the area and to attempt an assessment of its major economic problems and its potentialities. The fact that there will be, at least for some years, a relatively high retention of separate governments—that this is federation, not unification—may well reduce the degree of economic unification, but it must be assumed that economic barriers will not rise within the area and, therefore, that an economic analysis of the area as a whole is justified.

Before examining any individual field of economic activity it is well to assemble certain background data. The total area involved is about 486,000 square miles, nearly one sixth of the size of the United States. It is inhabited by approximately 6¼ million Africans, 200,000 Europeans and 20,000 others, mostly Indians. The African population is very roughly divided among the three countries, which means that Nyasaland has by far the greatest density. Subtracting its Lake Nyasa area,
that country has a density of about 63 per square mile; Southern Rhodesia has about 14 per square mile, while Northern Rhodesia has only $6\frac{1}{2}$ per square mile. None of these densities is high, but there is congestion in a number of areas, such as the southern shore of Lake Nyasa and some of the Lake Bangweulu islands in Northern Rhodesia where densities of 300 per square mile are found, and in much wider areas there is overpopulation under the present agricultural systems. It was estimated in 1950 that the African population in the two Rhodesias was increasing at a rate that would double the population in 25 years.

Southern Rhodesia has three quarters of the European population of the area, and immigration to that country has been very rapid in post-war years, so that the 1952 European population of 152,000 was almost $2\frac{1}{2}$ times as great as in 1939. Northern Rhodesia has somewhat over 40,000 Europeans with a heavy concentration on the Copperbelt. It is confidently predicted that the European population, particularly in Southern Rhodesia, will continue to expand with rapidity, though housing and transportation problems may necessitate a slow-down in the immediate future.

The bulk of the Rhodesias is situated on the plateau of Central Africa. Elevations in Northern Rhodesia range between 3,000 and 5,000 feet above sea level, except along the Luangwa trough and the Kafue and Zambesi Valleys. In Southern Rhodesia, a belt of land above 4,000 feet runs nearly across the country from Southwest to Northeast. This area, which is about one fifth of the country, contains most of the European population, and is the economically more advanced portion. From this region of "high veld" the land drops off through a broad "middle veld" to the "low veld" of the Zambesi Valley in the Northwest and of the Limpopo and Sabi basins in the Southeast. Nyasaland is composed mainly of plateaus and highlands ranging from 3,300 to nearly 10,000 feet, plus a portion of the Great Rift Valley occupied by Lake Nyasa in the North and by the Shiré River in the South. The lower Shiré Valley, with an elevation of only 200 to 300 feet, is the lowest part of the territory. From the standpoint of size alone, there would appear to be ample room for the present population and for a considerably expanded
one; and there is an adequate range of elevation to permit great diversity of crops, from tropical and subtropical to middle latitude varieties.

III

Because of the pervasive influence of transportation, it is desirable to present a brief overview of the present position before turning to the productive economy of the area. The existing rail lines and roads have been entirely inadequate in post-war years to meet the demands made upon them. This has resulted in temporary shut-downs of Copperbelt mining, in the accumulation of sizable chrome ore and other mineral stock-piles, and in the rationing of power, and it has contributed to the great shortages of building materials. Obviously, any expansion of the economy must be predicated upon improved transport facilities and equipment. The fact that the area is entirely landlocked complicates the picture, requiring improved facilities in adjoining territories as well.

Nyasaland is served by one rail line running from Nyasa to the port of Beira in Portuguese Mozambique, plus a north-south trunk road in process of improvement and, of course, Lake Nyasa itself. The backbone of the whole transportation system of the Rhodesias is the rail line from Beira to Salisbury, Bulawayo, Livingstone, Lusaka and the Copperbelt. The Rhodesias have alternate routes to the coast, southward through Bechuanaland to the Union, and westward through the Congo and Portuguese Angola to the port of Lobito on the Atlantic. The former line is light, and distances to ports are excessive, but it is important in traffic between the Rhodesias and the Union. The line to Lobito must be shared with the Congo, but long-standing agreements between the copper-mining companies and the Rhodesia Railways result in the bulk of Copperbelt traffic being shipped via Beira.

An important new rail link is now under construction, connecting the present line near Gwelo in the Midlands of Southern Rhodesia with the excellent port of Laurenço Marques in Mozambique, entailing a construction of about 200 miles of line
in each of these two countries. Significant advantages of this line include the tapping of a new port, which should reduce congestion at Beira, and the potential opening up of an undeveloped corner of Southern Rhodesia which includes some excellent country and some areas suitable for irrigation.

The trunk roads of the Rhodesias parallel the rail line, and there is a direct connection between Salisbury and Lusaka. All of these routes are being improved, as is the Great North Road to the relatively neglected eastern lobe of Northern Rhodesia. Contact with this part of Northern Rhodesia is somewhat handicapped by the extension into the country of the Katanga pedicle of the Congo, while contact between Nyasaland and Southern Rhodesia is similarly affected by the extension of Mozambique territory up the Zambesi Valley.

For the future, it will doubtless be necessary to double-track the railway from Salisbury to Beira, to make a more direct rail connection from Salisbury to Lusaka and to improve the road facilities in the northwestern and northeastern parts of Northern Rhodesia. Eventually, it may prove practicable to join the rail system of Northern Rhodesia to that of Tanganyika, but this should not be attempted until the potentialities of the area traversed are more apparent. Interests in Northern Rhodesia would also like to see a new line to the Atlantic, perhaps to Porto Alexandre or Mossamedes in Angola.

The Central African Airways gives adequate air coverage within the territory and makes connections with the Union and with British East Africa, while Livingstone has an airport of international importance.

IV

Turning to the productive economy of the region, the position and potentialities of agriculture claim first attention. It takes but a brief examination to reveal the relative poorness of the area for intensive agricultural pursuits. The basic physical handicaps are the climatic and soil characteristics of the area. The highly seasonal pattern of precipitation, with rainfall almost entirely confined to the summer season, means that cropping is confined to this one season unless irrigation can be applied. Secondly, the relatively small total precipitation over the bulk
of the region suggests that cropping areas are restricted, and that the larger portion is suitable only for a less intensive grazing. A third major climatic handicap is the high degree of unreliability in the rainfall: unreliability in onset of the rains, in their duration, in the distribution within the season, and in the total amount. This is closely reflected in the wide variance in crop yields and in the carrying capacity of pastureland. Yields of corn, the staple food crop, fluctuate widely, and imports of corn consequently vary sharply from year to year. In the period 1945–1950, for example, the lowest imports of corn to Northern Rhodesia were 63,000 pounds and the highest 56,983,000 pounds. Low yields, furthermore, not only are a result of low precipitation, but may be occasioned by excessively wet seasons.

Precipitation varies considerably with altitude, aspect and latitudinal position, and, in the future, these differences will lead to more clearly defined agricultural regions than now exist. The atypical areas, such as the lower lands of the Zambesi, Shiré and Sabi Rivers, or the higher lands of Nyasaland, will be looked to for specialized production to bring greater variety to the agricultural pattern.

Temperature characteristics are, in contrast to precipitation, unusually favorable. High temperatures usually associated with the tropics are considerably modified on the high plateaus, and the light ground frosts which are likely during the winter at higher altitudes impose few limitations on the range of crops which may be grown. On the other hand, the prevailing high temperatures below 2,000 feet permit the production of such tropical lowland crops as sugar.

Although soil surveys are entirely inadequate as yet to permit any sound quantitative judgments, it is generally accepted that by far the largest part of the area has mediocre soils. There is a widespread deficiency of available phosphates, and the structure of most soils tends to deteriorate rapidly when they are subjected to cultivation. Loss of structure is in turn followed by a sharp decline in productivity and by increased susceptibility to erosion. In general, the soils derived from the ancient rocks of the plateau are shallow and infertile, while it is mainly the younger soils of the lowlands and valleys that are really productive.
The primary result of the combination of soils and climates is that only a very small part of the area may be favorably classified for intensive arable-mixed farming, while the bulk of the area, perhaps two thirds, is suitable only for grazing. It is safe to say that the most important physical problem facing the federation is proper utilization of its land surface. But a speedy solution must not be expected. In the meantime, land practices and certain economic forces are not, at present, conducive to the maintenance of what quality does exist. A few examples will suffice to indicate the breadth of the resulting problems.

In considerable parts of Rhodesia the Africans engage in *chitemene* cultivation, which has many varieties, but the essential common feature of which is the practice of lopping branches or felling trees over a wide area surrounding the actual garden and then burning them on the garden. Depending chiefly upon quality of the soil, between 200 and 500 acres are required for the continued subsistence of a family of four. Burning destroys weeds, makes clay soils more friable and provides a fertilizing ash. But modern conditions have, unfortunately, led to the degeneration of this and other traditional farming systems. Partly because of the absence of from 40 to 70 per cent of the males, who migrate to the mines, industries and European farms, the original system of annual garden extension has often been abandoned, even when there is more than ample land. Secondary crops are often neglected to the detriment of nutritional standards. In some areas, degeneration has resulted from the expansion of population and the consequent shortening of the bush or grass fallow which, on the old rock soils, should probably be close to twenty years. These phenomena are by no means confined to British Central Africa; to an extent they represent a somewhat inevitable effect of the introduction of a modern economy. But the degradation of large areas must be recognized as a problem of major import, and appropriate steps must be planned to offset its deleterious effects. An increased disharmony between rural and urban areas may otherwise prove to be a serious barrier to continued development in any sphere.

European farming practices also leave much to be desired.
The most important areas are in the "high veld" of Southern Rhodesia, especially around Salisbury, and along the railway belt in Northern Rhodesia; lesser areas are in the southern highlands of Nyasaland, in adjacent areas of Northern Rhodesia centered on Fort Jameson and in the extreme North around Abercorn. Although a broad range of crops can be grown in these areas, there has been a high degree of concentration on a limited number.

Export crops, because of distance to the sea and to eventual markets, are restricted to those of high value per unit weight. The important crops with foreign markets are tobacco in all territories, and cotton, tea and tung from Nyasaland. Of these, Europeans produce most of the tobacco and all of the tea and tung. Tobacco is the most important export crop of all three countries, tobacco and tobacco products comprising close to half of Nyasaland's exports by value, and 35–40 per cent of the much larger Southern Rhodesian exports. Tobacco makes heavy demands upon the soil and there has not been adequate compensating fertilization. There is adequate land for expansion of production, but the future must see proper rotational and fertilization practices. A subsidiary disadvantage of the concentration on tobacco has been at least a partial neglect in the production of a satisfactory food supply.

Larger quantities of corn, the African staple food, are also produced on European farms. Improper cultivation of this crop can be highly contributive to soil erosion. The present form of land use, then, particularly in the central tableland of Southern Rhodesia, endangers not only the future of the higher lands but, by the washing down of eroded soil, the potentialities of the lower parts of the country as well. Other problems include the excessive congestion in certain areas, the inadequacy of African techniques, the evils of grass-firing, and the shortage of domestic and stock water points.

These agricultural and land-use problems speak eloquently the need for increased attention if this portion of the economy is not to become limiting to over-all development. Future emphasis in areas suitable for cropping should probably be upon mixed farming, because, with poor soils, any transformation to
permanent cultivation will require composting with cattle manure. Furthermore, the over-all quality of the area would suggest that livestock farming must eventually assume a very important part in the area's economy, primarily because of climatic limitations on tillage agriculture. Cattle are at present virtually excluded from about five eighths of Northern Rhodesia because of the presence of the tsetse fly, but close to nine tenths of Southern Rhodesia is fly-free and it is reasonable to predict that progress in combating trypanosomiasis may well open up the entire area.

Phosphatic fertilizers may also be made available in the future from large deposits of apatite at Dorowa in Southern Rhodesia, while nitrogenous fertilizers might be produced by fixation, using the cheap power from one of the proposed hydroelectric developments. Meteorological, soil and ecological surveys should disclose the capabilities of lands at present but little used. In particular, lowland areas with sedimentary or alluvial floors, such as the Luangwa trough in Northern Rhodesia, need studying. Even the soils of the upland old-rock areas vary considerably, while the soils of Nyasaland have greater variety than those of the Rhodesias; the better areas in all three countries need careful delineation.

The over-all shortage of water, particularly during the winter months, makes obvious the desirability of studying irrigation potentialities, which are not inconsiderable. A major project has been proposed for the Shiré Valley in Southern Nyasaland which, in addition to the production of electric power and to stabilizing the level of Lake Nyasa to the advantage of transport and fisheries, would make possible the irrigation and reclamation of about 400,000 acres in Nyasaland plus additional acreage in Mozambique. In Southern Rhodesia, between 300,000 and 400,000 acres of the Sabi-Lundi area in the Southeast might eventually be brought under irrigation by the erection of a dam at Condo on the Sabi River. The recently completed Hunyani Poort Dam near Salisbury will permit the irrigation of about 2,000 acres below the dam. An area near Chirundu, where the Salisbury-Lusaka road crosses the Zambesi, is now being investigated to determine the practicability of producing sugar
under irrigation, while erection of the proposed hydroelectric installations, either the Kafue Project or particularly the Kariba Gorge Project on the Zambesi, would provide water for irrigation of very sizable areas of the Zambesi Valley. In Northern Rhodesia there are interesting possibilities in the Luangwa Valley for irrigation of extensive lands for the growing of sugar, rice and other crops.

On the plateau surface, increasing attention will be given to the potentialities of the swampy areas, both the very large ones and the smaller "dambos" and "vleis", areas of impeded drainage. The seven largest swamps and adjacent plains in Northern Rhodesia total 13,754 square miles, or no less than 6 per cent of the country. Just what the appropriate combination of uses should be in these areas will not be known until they have been much more thoroughly studied, but it is reasonable to believe that, with their apparently excellent soils and with an excess of water, the effects of proper control will be highly rewarding.

A rather special interest in the production of food attaches to fishing. It is carried on to some extent in all the larger lakes and swamps, but would appear to be capable of very great expansion, which would be highly beneficial to a population with a diet generally deficient in proteins and calcium. Fish farming could gradually become of real importance, with yields of 300–500 pounds per acre per year to be expected.

V

In secondary industry, the area is, as might be expected, in an early stage. Industry in Nyasaland is confined almost entirely to the primary processing of agricultural produce; that of Northern Rhodesia is concerned chiefly with the concentration, smelting and refining of minerals, but Southern Rhodesia displays surprising industrial variety, with some representation in most important fields. An indication of the rapid progress being made in Southern Rhodesia is revealed in value-of-production figures, which rose from £4 1/2 million in 1938 to £29 1/2 million in 1949 and to an estimated £73 million in 1952.

A number of influences strengthen the desire to industrialize, including the high cost of imported manufactures, the inability
to obtain desired goods during the war and early post-war years, and the wish to provide employment for increased numbers of immigrants. The fact that agriculture cannot be expected to absorb really large numbers of Europeans, in view of the use of African labor, places greater emphasis on industrial development than might otherwise be expected.

The small size of the market would appear to set definite limits on the size of the industrial establishment. Even if the European population, with an average high standard, triples or quadruples in the next quarter-century it will still be too small to support certain types of industrial enterprises. This could provide a strong incentive for upgrading the African standard, for it is only the indigenous people who will supply a potentially large market. It would not appear that opportunities for export of manufactured products are great, except for certain items processed or semi-processed from domestically produced agricultural and mineral raw materials. Adjacent Portuguese territories may possibly provide some market, but competition with South Africa will be difficult, as it will probably be with the Congo and East Africa, both of which have plans for industrial development.

As for labor, the rapidly increasing population should provide an adequate supply, but only if the present prodigal use is abandoned. There are constant complaints in the territories of a shortage in unskilled and semiskilled African labor, but a large part of this shortage is more apparent than real. With greater rationalization of farming, construction and industry, and with a reduction in the excessive number of domestic servants, there would be no serious problem. If approached with the proper perspective, the so-called shortage can be of tremendous value to the area, for it means that there is opportunity to upgrade the African and to set a goal higher than that of a largely self-subsistent peasantry. Shortages of artisans, of skilled labor and of managerial talent may, on the other hand, be restrictive influences in the years ahead.

The greatest single problem involving labor, and one of the most serious in the entire economy, is the existence of the “color bar”, which effectively restricts Africans from rising beyond a given level in industry, mining and other pursuits. Maintaining
such a barrier indefinitely is impossible and there is no moral or economic justification for its existence today. The Dalgleish Commission, studying the "color bar" maintained by the European Mine Workers' Union on the Copperbelt of Northern Rhodesia, recommended in 1948 that certain types of work exclusively performed by Europeans should progressively be opened to Africans, but the government was unsuccessful in effecting any change. In the spring of 1953, two of the large copper companies publicly notified the European unions that the restrictive clauses would cease to be honored by the companies in the future, a most interesting example of mining interests taking the lead over the government. What the outcome of this situation will be is difficult to predict, but it is not difficult to forecast that, unless constructive moves are made, the whole Federation will founder on the rocks of the racial issue.

The shortage of adequate fuel and power has been a severe problem in the Rhodesias in post-war years, requiring expensive and undesirable substitution of wood for coal, periodic slowdowns or stoppages in copper mining and the rationing of power usage. Although knowledge regarding coal reserves and hydroelectric potential is still somewhat sketchy, enough is known to indicate that the power and fuel position is quite adequate to support industrialization.

Coal is now produced only at Wankie, 68 miles southeast of Victoria Falls. Reserves there are estimated at 5,200 million tons of bituminous coal, a considerable portion of which is of coking quality. Much of the Wankie coal lies close to the surface; seams run up to 26 feet in thickness and the pit-head price of coal is now only about $2.80 a ton. Output in 1952 was 2.8 million tons, and a production of 5 million tons is planned by 1955. The Lubimbi area, 50 miles east of Wankie and about 30 miles north of the rail line to Bulawayo, has been under intensive investigation in recent months and may be the second coal field to be exploited. It is likely, in fact, that coal is present along both sides of the Zambesi for very considerable stretches. Investigations on the Northern Rhodesia side have been disappointing, though drilling on the escarpment at Gwembe has revealed a number of seams which may indicate the existence of a valuable coal field. Coal also is present in a large area in
the southeastern part of Southern Rhodesia. There are two known coal fields in Nyasaland: one in the Vipya Mountains near Livingstonia in the Northern Province, the second at Sumbu in the extreme South. In total, the coal reserves of British Central Africa are probably immense, certainly much greater than the $7\frac{3}{4}$ billion tons listed as "probable reserves". It is unlikely, however, that more than a small percentage will prove to be of coking quality.

The hydroelectric potential of the area is also very great and a number of large-scale projects are under intensive investigation. The area is handicapped by the marked seasonality in régime of even the larger rivers, but the very considerable potential heads and some excellent sites for storage are compensating factors. At present, most power is produced from carbo-electric plants, though Broken Hill obtains power from the Mulungushi and Lusemfwa Rivers and Livingstone from Victoria Falls.

The schemes receiving greatest attention are the Kafue River and Kariba Gorge Projects of which it is likely that the Kafue will be the first developed. The Kariba Gorge on the Zambesi above Chirundu would have an eventual installed capacity of 1,088,000 kilowatts while the Kafue, only about 50 miles from Kariba Gorge, would be only about one-third as big. But the Kafue could be completed at a considerably earlier date and would cost less than the Kariba. Disadvantages of the Kafue Project, on the other hand, are that demands from the Copper-belt and Southern Rhodesia will leave little if any excess power available after its completion and that comparable possibilities for irrigation are lacking. Both of these projects are attractive and, given a continued rapid economic expansion, it is only a matter of time before they both will be developed. Other excellent sites can later be developed along the Zambesi and its tributaries, on the Murchison Cataracts of the Shiré in Nyasaland, and on the Chambezi headstream of the Congo. The new Federation is, then, highly favored as far as power potential is concerned. Electricity is already available at relatively low cost because of the abundance of cheap domestic coal, and should be greatly reduced in cost with the proposed hydroelectric stations.

The territory is also well endowed from the standpoint of industrial raw materials. In the agricultural sphere, cotton,
sugar, vegetable oil, tung oil and food production can be expanded. In forestry, the Rhodesian teak forests of the Livingstone-Shesheke districts support one of the largest hardwood saw-milling plants south of the equator. The mills are, next to mining, the most important industrial undertaking in Northern Rhodesia. However, the bulk of the forested area of all three countries is in poor-quality savanna woodlands, and large imports of timber must be expected to continue. Increased attention to the planting of forest reserves, however, might well reduce the needs for this bulky import. Trial plantings of tropical pines at Ndola are reported to show favorable progress.

Mineral raw materials are tremendous and varied, but, for many years, greater importance will attach to them as exchange-earners than as raw materials for Federation industry. Production on the Copperbelt, one of the world’s important sources of copper and cobalt, occupies a predominant position in the economy of Northern Rhodesia and will continue to be called upon to meet a large portion of necessary imports for an expanding economy. Without the Copperbelt, in fact, there probably would have been little incentive for Southern Rhodesia to support federation. Reserves on the Copperbelt are adequate for many years; several untouched ore bodies are known, and other large areas being prospected appear very favorable. There is also a good possibility that the area may become an important source of uranium ore. Not only will mining be expanded in this belt, but the refining of minerals will receive further attention as power becomes available.

Other important minerals are lead, zinc and vanadium at Broken Hill, Northern Rhodesia, chrome ore and asbestos in Southern Rhodesia, all capable of great expansion, and gold in Southern Rhodesia, production of which is declining. There are also known deposits of pyrochlore (columbium), tungsten, tin, bauxite, mica, pyrites, apatite and others. Much of the area, furthermore, remains to be adequately surveyed by modern techniques.

Particular importance from the industrial standpoint attaches to the reserves of iron ore. Here again, available information suggests a very favorable position. Large but undetermined reserves lie in widely distributed parts of the basement schists of
Southern Rhodesia. Mining is thus far confined to an open-pit operation at Riscom, near Que Que, to support the pilot-plant iron and steel mill of the Rhodesian Iron and Steel Commission there. Iron ore also occurs in small hill outcrops west of Lusaka and in the range of hills west of Mumbwa in Northern Rhodesia, but proposals to erect a small iron and steel mill at Lusaka do not appear practical at this time.

The potentialities of development in the Federation are sufficiently attractive to invite large-scale investment, providing the human problems can be solved. The International Bank for Reconstruction and Development has made two large loans, one for power development, the other for rail expansion and improvement. The Economic Co-operation Administration and the Mutual Security Agency have made sizable grants, and private American interests are involved in the Copperbelt. Demands for capital will continue high and should greatly increase. There will, however, be shortages and delays in many fields, which must be considered inevitable in an economy expanding with such rapidity. Temporary recessions in export prices may also cause distortions, but this should not be permitted to detract from long-term prospects.

In conclusion, it may be said that the new British Central African Federation has, on the whole, excellent potentialities for economic expansion. The weakest link is the agricultural base, though continued high production of valuable export crops is possible, as is a greatly expanded output of food crops and a considerable diversification in production of vegetable raw materials. The remarkable metallogenetic zone of the Copperbelt and other substantial mineral reserves can readily be exploited further to yield exchange and provide industrial raw materials. Finally, there is room for expansion in many secondary industries, and there is a power, fuel and raw material base adequate to justify a fully integrated economy. Optimism must be tempered, however, unless a more enlightened attitude among white settlers and miners toward African advancement and participation is evolved.

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