RURAL AGRICULTURAL TRANSITION AND THE ROLE OF SETTLEMENT SCHEMES IN COLONIAL ZAMBIA: AN OVERVIEW

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Introduction

There is growing awareness by some geographers of the importance of an historical perspective for a full understanding of present geographical patterns (Slater 1975; Cowie 1979 and 1981). This has arisen partially out of the realization that certain features of tropical African geography,such as transport networks and the morphology of towns, cannot be understood in terms of the circumstances of today (O'Connor 1969).

Similarly, almost twenty years after the attainment of political independence, one cannot discuss intelligibly Zambia's current agricultural development policy and the role of land settlement schemes without occasionally referring to policies and attitudes that were initiated, at varying stages of the colonial era, and which have contributed to the present structure. Furthermore, Chambers (1969, p.3) has observed that, in practice, the post-independence projects have often been copies of earlier ventures, whereas the ideological and economic motives have differed considerably. The thesis here is that the current Zambian rural agrarian landscape, have a firm grounding in colonial policies especially in the operation of land policy (Fig 1).

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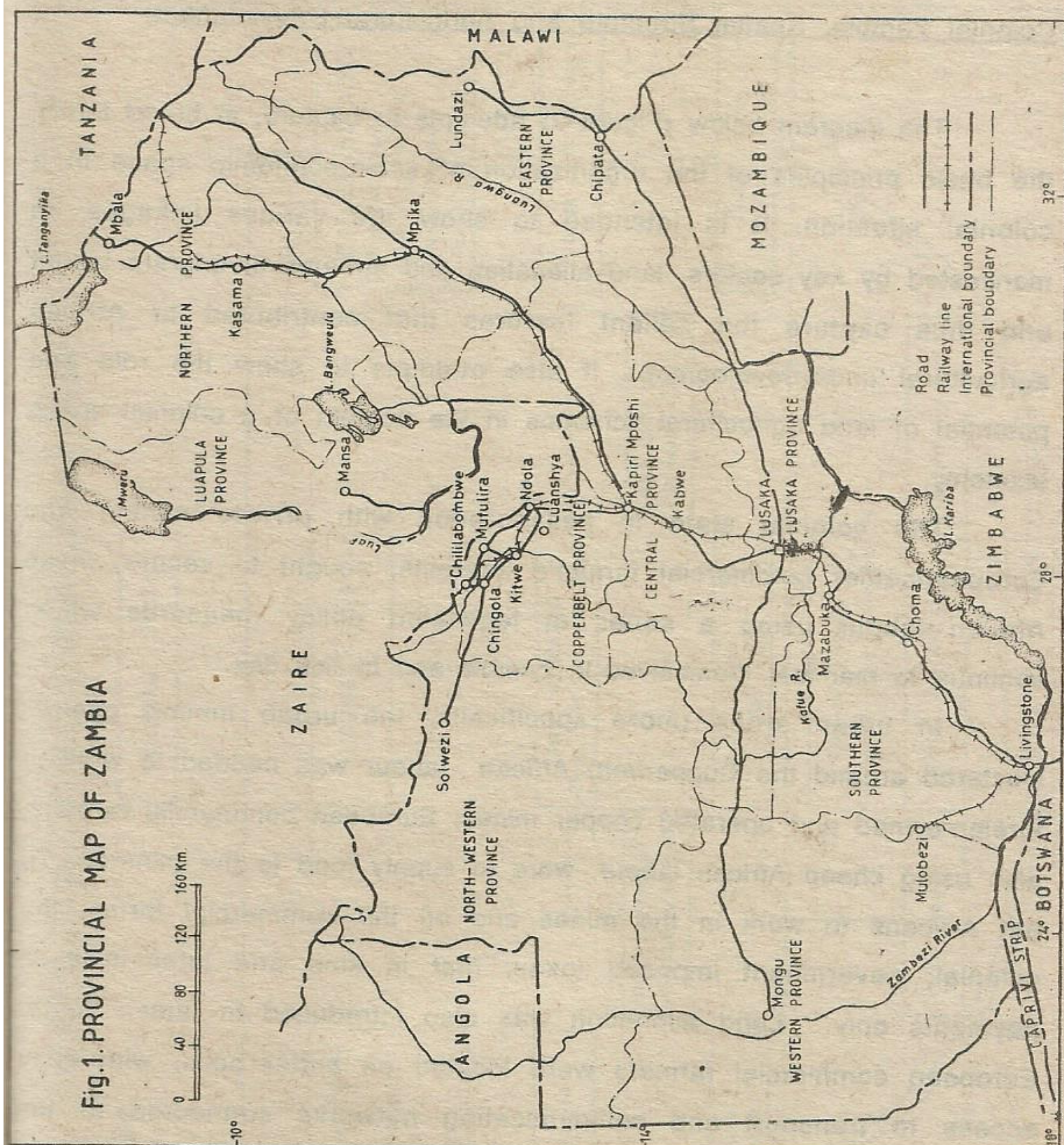

Fig.1. PROVINCIAL MAP OF ZAMBIA

Colonial Zambia, Spatial Structure and Agricultural Development:

The diagram below (Figure 2) attempts to capture, in broad terms, the basic principles of the organization of socio-economic space in a colonial situation. It is intended to show the various linkages as manifested by key sectors, land alienation and streams of migrant labour and thus capture the salient features that contributed to African agricultural underdevelopment. It also attempts to show the role and potential of land agricultural schemes in the context of a colonial space economy.

The colonial state in collaboration with private mining and Europeansettler commercial farmer's interests, sought to secure cheap African labour using a series of legislated policy measures which continue to manifest themselves in Zambia and to this day.

In urban areas (more specifically, the urban mining centres clustered around the Copperbelt) African labour was needed to work in foreign-owned and operated copper mines; European commercial farmers, also using cheap African labour, were to supply food to the miners. To get Africans to work in the mines and on the commercial farms, the colonial; government imposed taxes, first in kind and later in cash payments only. Land alienation was also introduced in later years. European commercial farmers were located on better soils, with easy access to transport and communication networks connected to the markets. Africans were shunted into Native Reserves, which consisted of infertile soils and, sometimes infested with tsetse fly.

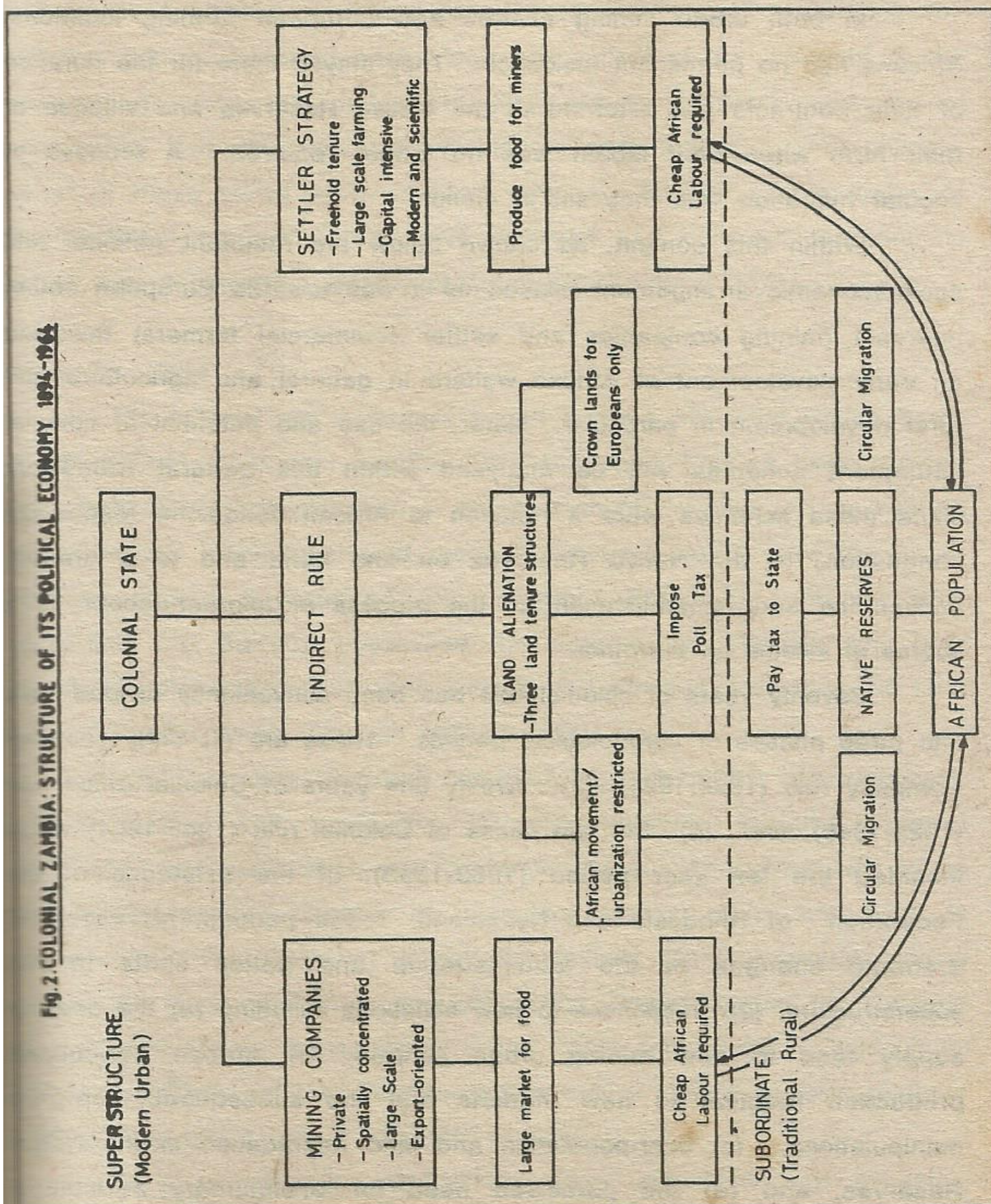

Fig.2. COLONIAL ZAMBIA: STRUCTURE OF ITS POLITICAL ECONOMY 1894-1964

In both urban mining centres and European farming locations, Africans had no permanent residence. They stayed there for the duration of their contracts and returned to the Native Reserves and villages of their birth when their labour was no longer required. A process of circular migration was thus set in motion.

Within this context, as shown below the resultant political and socio-economic arrangement, biased as it was towards European settler interests (mining companies and settler commercial farmers) thwarted an early development of African welfare in general and agriculture and rural development in particular. Later, the use and potential of colonial settlement schemes will be analysed within this general framework since these schemes were a reaction to African conditions (especially congestion) in the Native Reserves on one hand and to a gradual acceptance and establishment of the process of migrant labour as a source of income on the other.

Seventy years of colonial rule has been conveniently divided here into three phases or chronological periods. These are (1) thirty years of Company rule (1894-1924), (2) ; twenty one years of Colonial office rule (1924-1945), and (3) the last phase of Colonial rule (1945-1964) which included the ten year period (1953-1963); of the existence of the Federation of Rhodesia and Nyasaland. These periods, represent (1) dramatic changes in the administrative and policy shifts in the superstructure, (2) responses to new situations including (a) the need to supply food to new mining urban centres, (b) African agricultural production reaction to new markets and the subsequent crop-price manipulations, (c) over-population and land degradation in the Native Reserves, and (d) the perceived need for evolutionary agricultural development through impact schemes. Looking back over these development phases, one can identify certain "views" underlying the policy initiatives taken at each stage and reflecting the interests of the government, and the major pressure groups (settlers and mining companies) that dominatedpolicy-making in each instance. Interestingly, some of these views seem to have become elevated to the status of "conventional wisdom" which have survived and continue to influence policy over a surprising lengthy period (Smith 1976, p. 112).

1894 to 1924

The colonial era in Zambia began in 1894 when the British South Africa (B.S.A) Company, founded by Cecil John Rhodes, was granted powers of direct administration in areas north of the Zambezi as well as in Zimbabwe. This chartered company secured rights over the entire territory except Barotseland (now western Province) (Gann 1958, pp.55-59). It thereby possessed the authority to alienate any land outside Barotseland to European settlers and Africans occupying the land were obliged to move (Baldwin 1966, p. 145).

The Company required revenue for economic development, administration, and profit for its shareholders. Initially, mineral exploration and exploitation was the major focus. Agriculture was to be an ancillary activity; capable of supplying low-cost maize and meat to the miners. The Company owned the railway running through choice agricultural lands in Zambia and connecting Zimbabwe and the Katanga (now Shaba) copper mining region in the Congo (now Zaire). Agricultural development was in the Company's interest in that it yielded revenue from the expanded use of transport services.

As it turned out, mineral discovery was slow and irregular. However, the need to develop commercial agriculture, if only for selfish corporate reasons, still existed. Two choices were open to the Company; either to rely upon the African population to supply agricultural products, or to encourage the immigration of European farmers. They decided on the later arguing that European settlers possessed the skills and capital necessary for modern agricultural practices (Baldwin 1966, p. 146). By 1921, there were 714 Europeans engaged in agriculture.

The Government policy towards African agriculture was to maintain the status quo of native agricultural production. The Company expected Africans to cover the cost of their own administration as well. Native taxes were introduced and steadily increased with the twin aim by the Company of obtaining a source of revenue and of encouraging (and forcing)unskilled indigenous labour to move to Southern Rhodesia (Zimbabwe) (Van der Hoeven 1982, p. 218). During the thirty years of Company rule, Zimbabwe was actively developed as a "white man's country" while Zambia was administered as a "tropical dependency" of Zimbabwe. Zambia was therefore, regarded as a labour pool which was conveniently under the same general administration as that of Zimbabwe. By 1921 there were approximately 50,000 zambians at work in other countries (Kay 1969, p. 503). Labour migration became almost a way of rural life with profound negative development impacts in these areas. Its selective nature, for example, has continued to leech the rural areas of the youngest, fittest, and most enlightened future leaders of these rural communities.

It was also during Company rule that the first alienation of land for non-African settlement was made. In spatial terms, Africans were to be concentrated into restricted areas set aside for them. Three large areas were particularly affected. These are (1) along the line-of-rail; (2) the North Charterland Concenssion (i.e. the southern part of the

Eastern province); and (3) on the B.S.A Company's estates south of lake Tanganyika around Mbala.

In 1924 the administration of the territory was taken over by the British Government, while the Company retained for itself large areas of land and all the mineral royalties.

1924 to 1945

The first large-scale copper mining developed during the late 1920s and early 1930s (the depression era), after new methods for treating low-grade sulphide ore had been discovered. The mining urban population increased considerably, providing a large food market. Before this development, settler farmers and traders supplied food stuffs (particularly maize, pulses and meat) to the mining towns of Zimbabwe, the mining region of Shaba Province and the fledgling and nascent towns of Livingstone and Kabwe (then Broken Hill) in Zambia.

Within a few years, copper mining dominated the economy of Zambia. In 1938, Dean (1953) calculated that 55 per cent of the national product of Northern Rhodesia originated from the mining industry, as compared to 13.5 per cent originating from agriculture. Within a decade of developing the copper mines, the economy and social picture of Zambia had changed considerably (Fry 1979).

The Colonial Office guided by the Passfield Memorandum adopted, as its policy towards the Africans the responsibility of "providing for the Natives sufficient land to enable them to develop a full Native life in their own areas; sufficient land to meet the inevitable expansion of the populations settled thereon and sufficient to enable the Government with a quiet conscience to release to European settlement other areas suitable for the purpose (Clegg 1960, 66-67).

During the Company rule, reservations were made on an ad hoc basis. In 1928, thirty-nine native reserves were legally established, and the process of moving Africans into these areas was begun. Following this consolidation, the land of the territory was divided roughly into three categories (Gray 1960, p.85). Areas reserved specifically for Africans totalled 28.4 million hectares (71 million acres) and comprised of Barotseland (now Western Province) (14.8 million hectares or 37 million acres) and the native reserves (13.6 million hectares or 34 million acres). Land already alienated to Europeans consisted of 2.2 million hectares (3 million acres) in farms. The remaining areas came to about 42.0 million hectares (105 million acres), of which 4.4 million hectares (11 million acres) were forest and game reserves and 37.6 million hectares (94 million acres) were unallocated.

Generally, land reserved for Europeans had much better soils (Chisamba, Lusaka, and Mazabuka being the focal points of this early development), and those assigned for African occupation and use did not have soils of good quality and were usually located in remote areas, often infested with tsetse fly.

The effects of the land alienation policy were to lessen existing African market competition and, more important, by reserving for European settlement a strip extending in most areas about 32 kilometers (20 miles) on each side of the railway, to limit severely potential African competition in commercial markets (Baldwin 1966, p.150).

Initially, the rise in the African's market share did not cause undue alarm among European settlers. As long as domestic production was sufficient to meet the internal demand at the prevailing prices, there was little to worry about. The situation, however, changed drastically after the sharp retrenchment in the copper industry in 1932. The producer price for maize fell by a third in that year. African competition became a fact for European farmers. Accordingly, the Maize Control Ordinance of 1936 was enacted. This ordinance established the Maize Control Board and gave it the power to purchase and sell all maize at fixed prices (Laws of Northern Rhodesia, 1948).

The market for maize was divided into an internal and external pool. According to Baldwin, the purpose of the division was to set the domestic price above the international price and then dump any surplus above internal sales on the export market (Baldwin 1966, p. 151). African supplier did not receive all revenue resulting from the sale of his maize because the Board deliberately set a lower buying price than it made to European producers. A substantial surplus was built up in the native pool so that by 1942 it had reached 85,000 or an amount equal to 34 per cent of the revenue actually paid for African-grown maize since 1936-37.

This price stabilization measure (set up under conditions of a declining market) was meant to penalize the Africans whose market share was expanding. the Africans could (and did) not refuse to accept their allocated quota. In fact, their response was totally surprising. Assured of a market for their maize, their output rose from 100,000 bags in the 1934 - 1935 season to 235,000 bags in 1935-1936. This increase of 135 per cent is a clear indication (and good example) of the willingness of Africans to respond positively when presented with a market opportunity.

Price controls and manipulations affected the cattle industry as well. A year after the enactment of the Maize Control Ordinance, the Northern Rhodesia Government adopted the Cattle Marketing and Control

Ordinance of 1937. With the coming of the depression, the internal market for European cattle declined sharply while the African share of this market increased from 50 per cent in 1928 to 67 per cent in 1936. This was a threat to European settlers.

In 1937 a Cattle Cattle Control Board was established, under government auspices, to fix minimum prices below which livestock sales were illegal. It was also the Board's duty to regulate imports and exports of cattle. In practice, the Cattle Control Board's decision to allow large numbers of the lower grades of livestock to enter the internal market from outside, while severely restricting the importation of the better grades achieved two goals of government policy. First, by raising the producer price of prime cattle 460 per cent between 1937 and 1956, it enabled the European livestock industry to flourish and the production of higher quality cattle to increase. Secondly, it maintained low prices for poorer quality beef so that compound-grade cattle (the lowest grade) sold for only 200 per cent more per 45 kilograms (100 pounds) in 1937. By keeping this "boys' meat" relatively inexpensive, the Board was able to hold down the cost of African Labour (Baldwin 1966, p. 158).

Overall, the relative market supply offered by African producers declined because of these manipulations such that by 1960, the African share of local production had fallen from its 1944 level of 63 per cent to only 44 per cent (Northern Rhodesia Government 1944 and 1961). Besides Africans concentrated more in maize production. They planted maize on land previously used as pasture and utilized a larger proportion of their animals for work purposes rather than for cattle sales.

We have noted the absence of official policy towards African agriculture throughout Company rule. the Colonial Office could not ignore future prospects of agricultural development. In 1925 it set up a department of Agriculture. In its first annual report, it declared what amounted to status quo policy towards African agriculture: "the process of gradually building up a native agricultural industry will be slow because of the necessity that it should be on a very sure foundation" (Northern Rhodesia Government, 1939). It was not surprising that all its early research and experimental stations were established in or near European farming areas - at Mazabuka (which also accommodated the department's headquarters), at Fort Jameson (now Chipata), and at Lunzuwa near Abercorn (now Mbala) and the B.S.A. Company's Tanganyika Estates (Kay 1969, p. 507).

Official interest in African agriculture was not aroused until the mid-thirties heightened, perhaps, by problems of food supply on the Copperbelt or because of repeated reports on the destructive effects of over-population in the reserves. In 1936, the Department of Agriculture launched an ecological survey as a stock-taking exercise (Trapnell and Clothier 1937; trapnell 1943).

In spite of the 1937 request by the Secretary of State for the Colonies to devise "a programme for the improvement of Native subsistence agriculture" (Despatch No. 489) the Department of Agriculture's objective continued to be "the development of production by Europeans and Natives of crops which can be sold, concurrently with the introduction of measures to ensure that the land on which such crops can be shall remain permanently productive (Northern Rhodesia Government 1938). Most of the Department's action was restricted to

European farming. Its action towards African agriculture focused on the conservation of resources and the rehabilitation of degraded lands.

Among the five worst problem areas of the country were the Native Reşerves of the Central and western provinces where the application of conservation measures was accompanied by massive resettlement schemes to alleviate population pressure within excessively overcrowded areas (Kay 1969, p.508). Most attention, however, was given to the reserves and resettlement areas of the Eastern and Southern provinces because of their large populations and severity of their problems and because staff there could serve European farming areas too. In these Provinces, conservation and resettlement had ceased to be regarded as an end in themselves and were now conceived as a prelude to the introduction of improved, modern systems of land use.

1946 to 1964

British colonial policy underwent significant changes which have found expression in the tropical African landscape. The catalyst for change lay in the policies of the paramouncy of native interests (from 1930) and the inevitable need to prepare colonies for self-government. There was need to stimulate social economic and political development. through the Colonial Development Corporation inaugurated numerous projects, both pilot and major in scope. The British swung increasingly towards creation of a "middle class" African peasant, modelled in part on the success of his fellows on paysannant communal farms in the French territories (Hellen 1969).

During the last eighteen years of Colonial rule, British policies towards African agricultural development in Zambia took the form of benevolent paternalism. The Government policy was to play a major role in determining the character and location of changes in African agriculture. These will be analysed in terms of three major schemes; (1) the African Improved Farming Schemes (A.I.F.S); (2) the African Peasant Farming Scheme; and (3) the Intensive rural Development Program, all of which were moribund at the time of independence. The new government initially steered clear from these experiments and whatever lessons derived from them. In later years, however, their broad characteristics were reinitiated albeit with slightly different objectives due to the nature of the prevailing conditions.

The Department of Agriculture's policy statement prepared in 1945 for the Ten-year Development Plan consisted largely of tentative proposals to continue its conservation work and to improve indigenous agricultural systems. Kay summarizes its seven stated objectives as follows: (1) The conservation of natural resources. (2) The distribution of population where necessary in the interests of conservation. (3) The improvement of agricultural methods (by encouraging the use of manure, introducing ploughs and wheeled vehicles, improving week control, etc.). (4) The introduction of subsistence production (by encouraging selection of seed, introducing new varieties, improving planting techniques, etc.). (5) The in troduction and development of cash crops. (6) The introduction on an experimental basis in selected areas of African Farm Settlements. (7) The prosecution of experimental work in connection with the fore going proposals (Kay 1969).

The policy was one of evolutionary change and was in harmony with the ideology of indirect rule. As the department of agriculture saw it, agricultural development in Zambia depended firstly, upon providing producers with technical and scientific knowledge whereby productivity could be increased and production methods could be made flexible; with capital whereby the new production units might be suitably equipped; and with managerial ability whereby the stocks of knowledge, capital, land and labour might be put to good use. Secondly, it depended upon the provision of infrastructure including transport and communication facilities and services for processing and marketing agricultural produce. Through what came to be termed "accelerated evolutionary development" of traditionary agricultural systems, the Department of Agriculture was primarily concerned with the former group requirements. It had, first, to obtain the necessary knowledge, capital, and know-how; secondly, it had to distribute these assets; and thirdly, it had to determine the form or forms of production unit on which they could be employed (Kay 1969, p. 511).

Impact schemes were adopted. These were to become the main vehicle for agricultural development for the next decade or so. This was not a departure from the declared policy of effecting evolutionary change. The object of the impact schemes was to launch progressive individuals (selected by their willingness to volunteer) into modern, commercial agriculture on family holdings. The demonstration method was favoured: the nucleus of proficient farmers thus created would inspire others to improve their farming and to seek a living from the land (Hellen 1969, Kay 1969).

The African Improved Farming Scheme was introduced in 1946 along the railway line only. Tonga farmers with relatively large holdings, were invited to enter into an agreement with the Department of

Agriculture whereby they accepted the supervision of the Department's staff and adopted improved methods[1] in return for a higher price (22 shillings per bag) than that paid by the Maize Control Board (18 shillings per bag) (Kay 1969, p.513). Fertilizers and seeds were distributed against payment to registered farmers and small two-wheeled ("Scotch") carts were sold to all who wished to buy them.

In 1949, when a revised scheme was introduced, there were 362 participating African Farmers. In the revised version the price stabilization fund was renamed the Southern Province African Farmers' Improvement Fund (A.F.I.F.) and was to be replenished annually by a levy on all African sales of maize in the province. Out of this fund, an acreage bonus, payable on each acre farmed according to the prescription, was substituted for the differential maize price. Further, a lower grade of "improved farmer" was added to the scheme. The Scheme was extended to the "railway zone" of the Central Province and to the Eastern Province in 1951. Three years later, (in 1954) limited short - and medium-term credit was made available and recouped from bonus payment.

Rees (1958) reporting on an economic survey of improved farmers among the Plateau Tonga concluded that the scheme had not been successful as had been hoped originally, although the farmers examined had progressed a considerable way from shifting cultivation to stabilized commercial farming.

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[1] The following rotation and treatments were prescribed: (1) maize, with an application of not less than five tons of well-made farm yard manure per acre; (2) sunhemp or velvet beans ploughed in as green manure; (3) maize, with an application of ammonium sulphate, and if necessary; super-phosphate, (4) a harvested legume crop, commony groundnuts (Arachis hypogaea), beans (Phaseolus) or cowpeas (Vigna sinensis) (Allan 1970, p.395).

Allan (1970, p.397) concluded that although the improved farmers have contributed some 10% of the value of crop sales in 1962-64 they would probably have made much the same contribution if they remained outside the schemes. They were the larger landholders in the most productive areas. He thought that the scheme did not come near to achieving one of the earlier stated objectives: "to bring about a permanent improvement in standards of agricultural practice in general".

Both Allan (1970) and Rees (1958) mention that the scheme had been adopted by a small number of farmers only (about 6,000 in 1963 by Allan's estimates) and that supervision was expensive. Its effects were limited and localized. It did not, within the period reviewed by these authors, make a significant contribution to national production and productivity. Allan (1970) however, thought that the scheme's most substantial achievement was the establishment of a nucleus, numbering less than a thousand, of progressive farmers. These, he speculated, could prove to be an invaluable foundation for future progress.

The second scheme was the African Peasant Farming Scheme (A.P.F.S.) which was started in 1948. Although intended for all seven provinces of Northern Rhodesia, it was largely confined to three of them.

According to Allan (1970) the object of the African Peasant Farming Scheme was socio-economic at the start: it was to improve the social and economic condition of the rural people as a whole, by advancing them from subsistence cultivation to commercial farming. The social aspect was dominant: this was still the era of paternalism. The African Peasant Farming Scheme applied to rural development. By 1958, the emphasis had shifted to rest heavily on the economic aspect. Targets were suggested for commodity production and the scope of the project contracted from "general betterment" to "reinforcement of success" within the areas of satisfactory economic potential.

The African Peasant Farming Scheme cartered for areas in which the farmers had no equipment for plow farming and no cattle. It thus depended on credit, provided in the form of services, facilities, equipment and inputs. Land (up to 20 acres or 8 hectares was cleared for the prospective farmer and contour-ridged. He was provided with a complete set of equipment and cattle if he had none. The costs were debited to him.

In the case of the Eastern Province Allan (1970) points out that acreage bonuses were paid on a sliding scale. A standard five-course rotation was also laid down: (1) maize or Barley tobacco; (2) groundnuts; (3) maize, with cattle manure; (4) legume crop, or part Turkish tobacco part grass fallow; (5) green manure. In the other provinces, there was no bonus scheme and there was no direct financial inducement.

The scheme succeeded in the Eastern Province largely because the soils were initially fertile and had not deteriorated, and were also suitable for valuable cash crops, notably confectionary groundnuts and Barley tobacco. According to (Kay 1966) remarkable general progress had been made bringing the Eastern Province from the verge of destruction to the threshold of agricultural revolution.

Hedlund and Lundahl (1983) have presented a description of the Mungwi project in the Northern Province where members of the Bemba tribe were recruited to permanent settlements and controlled commercial agriculture. This project was started at the beginning of the 1950s. During this time, the Bemba employed an extensive slash-and-burn type of agriculture known as Chitemene. This system allowed for cultivation of a field for two or three years, followed by a fallow period of fifteen to twenty years. Hardly any agricultural production for sales purposes took place. Instead, cash was obtained by means of a very intensive migration to the copper mines, with the result that male Labour was conspicuously absent in agriculture.

The authors report that Mungwi became a system which was planned for and limited to an area comprising plots of identical size. To achieve the project locally and to obtain local participation, the administration entrusted the village headman to find one or more households that might production and who were generally positive to proposals for modernization. The idea was to break the old village patterns and to allocate the plots to enthusiastic settlers whose eagerness had hitherto been hampered by a conservative village structure (Hedlund and Lundahl 1983).

The project failed and the following reasons are cited by the authors (Hedlund and Lundahl 1983). It became readily apparent that the "wrong" type of people had been recruited. The village headman had used the opportunity to get rid of the most unpleasant and troublesome families by recommending, or even forcing, these families to join the project. The second category of project members were house-holds who joined with a view to receiving agricultural subsidies.

Each household was given seeds and a field which had already been cleared and plowed. In spite of massive extension efforts and intensive control of the area and the project members, the results were mediocre. Soon, members started to leave both the project and the area. The ubiquitous control, the threat of forced eviction (both common features of settlement schemes) in combination with poor harvests made others revert to the traditional crops and to subsistence production. Today, the scheme no longer exists.

The last impact scheme prior to the country's attainment of political independence was the Intensive Rural Development Programme for the Northern and Luapula provinces sponsored by the Rhodesia Selection Trust. Its aim was to encourage rural development in the areas from which the copper mines drew much of their Labour.

Initially, the Northern Rhodesia Government set up a depot farm to train Africans in the techniques of modern farming. The plan was as follows: the trainees were to be provided with land nearby in order to form the core of an agricultural community, that would, hopefully, influence farming practices in the entire area. Development Area Training Centres were established to train men and women in such activities as constructing better houses, improving health conditions, and making clothing. When these people returned to their villages, it was hoped that their knowledge would spread through the entire community (Halcrow 1958).

The scheme did not work out as planned. The persons participating in them were very few and their influence on others was not very great. The Rural Development Commission (1960) found that 1,000 men and women who attended courses in 1959 faced ridicule when they returned home and often quickly abandoned what they had learned. The programme was modified to put greater emphasis within the villages themselves. There was no evidence of an agricultural revolution starting in the Northern and Luapula provinces (Northern Rhodesian Government 1961) and other parts of the plan also fared badly financially (Northern Rhodesia Government 1960).

The Kariba project, situated on the Zambia river between Zambia and Zimbabwe, where large groups of Gwembe Tonga were forced to move to a new area as a result of the construction of the Kariba dam was important for its scale. The project was preceded by a dramatic movement of people. Some 70,000 Tonga were to be removed from the area that would turn into a lake.

Removal of the Gwembe Tonga was seen as an absolute necessity, since the dam was considered indispensable for providing electricity to the northern copper mines. Each family within the project on the Zambian (Northern Rhodesia) side of the Zambezi was given small plots of equal size and seeds for cash and subsistence crops were given to each household. The administration took advantage of the drastically changed situation and attempted to push technological change into the social vacuum that had been created (Hedlund and Lundahl 1983) The colonial authorities initiated an extension service to stimulate cash production and also to change the technological preconditions for an intensification of production.

The result, however, was largely negative. Cash production never caught on and the Gwembe Tonga reverted to their former subsistence mode of cultivation, applying old flexible river, ardening techniques on their small permanent plots. The overall economic result of the Kariba project is that the Gwembe Tonga had to face3 recurrent periods of hunger. No important sales of cash crops took place. Instead serious social and ecological disruption resulted. The Gwembe Tonga are no longer able to produce enough to cover their own consumption needs. Food aid has had to be used in order to avoid serious starvation. (Scudder 1973; Hedlund and Lundahl 1983)

Before we conclude our study of impact schemes, a Memorandum on African Agricultural Policy issued by the Department of Agriculture in 1957 deserve attention. According to this Memorandum, a regional approach to development as a matter of policy was suggested. The policy was dependent on the availability of scientific and technical staff and trained extension workers. The allocation of available staff was to be according to zones of potential production. The Department of Agriculture argued that dispersion of its staff would stultify the efforts of the entire department.

The country was thus divided into categories and different policy was adopted for each. Zones of High Potential were earmarked for total development. They consisted of three "zones": (1) the maize - growing, cattle-keeping areas of the Southern and Central Provinces; (2) the Petauke, Katete, and Kalichero areas of the Eastern Province; and (3) the areas of red loam soils in Ndola Rural District. These areas were selected after an assessment of a wide range of physical, cultural, historical and economic factors and not with reference to natural resources only

Zones of Medium Potential were more numerous and widespread. They consisted of localities worthy of consideration for development in the near future. Surveys, experiments and general conservation and extension work were to be pursued in these areas.

Zones of Low Potential covered the greater part of the country. In these zones, work was to be limited to ensuring adequate food supplies and the provision of essential conservation measures.

A fourth category of Special Zones was also set up. These were "special" in the sense that they needed specific attention because of the urgency of distinctive problems. They consisted of the Gwembe Valley (the need to prepare for resettlement in the Gwembe (Kariba) Valley; the Muswishi tsetse area east of Kabwe (then Broken Hill) (the need to protect the Muswishi area from incursions of tsetse fly); the Ngoni Reserve in Eastern Province (the need to deal with excessive over-crowding in the Ngoni Reserve; and the Bemba Plateau Intensive Development Area (discussed above) (which suffered from the general malaise found in all areas of low potential).

Kay (1969) noted that this policy of regional development endorsed the actual distribution of activity that had already emerged in an ad hoc fashion and put forward rational arguments for continuing with such a distribution of development effort.

Conclusion

This compressed review of official government policies on agriculture at different stages of colonial rule shows a marked and deliberately preferential treatment given to European farmers. Initially, there was no African agricultural policy. With the coming of large-scale copper mining, we have shown that when African farmers exerted significant competitive pressure on European producers, they were removed from most of the best agricultural land near the line of rail and the markets. We have also noted how agricultural marketing controls were utilized to penalize African producers and give preferential treatment to European farmers.

In the post Second World War era, a host of wrong remedies were suggested to correct problems of the reservations that were clearly a European creation. After "blaming the victim" (Africans) for practising "primitive" agricultural methods, "overstocking" and "overpopulation" that had undue emphasis on conservation and the adoption of European" methods of agriculture. The required practices moreover seemed to be based more on physical conditions in the European areas than on economic conditions in the rural sector.

Too much emphasis was placed upon the necessity for the immediate adoption of European methods of agriculture as the condition for raising income. These were too complex for any but a few already progressive Africans to understand. They could not be expected to succeed given the poor marketing and transport facilities, the siting of agricultural research stations, and the concentration of technical, scientific and extension staff (as outlined in the 1957 Memorandum).

When Zambia attained political independence, it inherited as a legacy of colonial development, two widely divergent agricultural systems - a European one and an African one - and, within the African system, two vastly different levels of development, that of farmers along the line of rail and in Eastern Province and that of farmers in all other areas (Dodge 1977, p.49).

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