Spatial Patterns of Development in Tropical Africa: Policy Implications from the Zambian Example

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Introduction

A definition of what is meant by regional development is contentious. However, few would deny that the concept does connote an upgrading of the material welfare of individuals at a given place, at a given time.

This material welfare encompasses a cluster of qualities and consequently an analysis of its spatial manifestation dictates the utilization of those techniques capable of effectively spanning its dimensions. This is attempted in this investigation on Zambia.

Specifically, several judiciously selected regional development indicators, comparable to those mentioned in the Third National Development Plan (TNDP), are factor-analysed. The factor score co-ordinates are then plotted. It is from the subsequent graph that District clusters, representing the different development levels, are identified and mapped. Rationalization of the observed regional development pattern perforce depends on an understanding of the underlying spatio-historical processes. Their relevant role is assessed herein.

Apart from its theoretical orientation, this study attempts to provide both a conceptual and empirical framework within which policy vis-a-vis an allocation of scarce resources to the most needy areas could be rationally articulated. Commenting on a parallel situation, in Sierra Leone, Forde[1] has for example, remarked that:

> The problems emerge in connection with present decision-making, with regard to development programmes. In the first place the allocation of funds is guided by the claims of individual goals (variables) rather than by an evaluation of relationships among a series of goals in their spatial context. In the second place, the influence of politics is at times too strong: too much attention is paid to the (meso) politico-territorial units established for administrative purposes within the country. Both problems, if unheeded, could give rise to unwise allocation of scarce resources and funds.

The subsequent portions of this investigation are organised into four components. The first examines the interactive indicators of development and their observed impact on Africa. The second deals with research design. The third is the discussion of the findings. Finally the policy implications of these findings are analysed.

Indicators of Spatial Development on Tropical Africa

Spatial development involves an interaction of several socio-economic dimensions. Here we consider an interaction of several such indicators. They include Communication, Urbanization, Co-operatives, Education, and Health (Figure 1). We believe, in brief, that an evaluation of the spatial impress of these factors could furnish planners with a sharp insight, so essential for dynamic, enlightened and socially-just spatial organization. A detailed discussion of the functional relationship among these ingredients of spatial development is relevant at this point.

The African space economies are highly differentiated. This condition naturally results in the existence of deficit and surplus areas with regard to the availability of specific goods and functions. The prevailing post-independence predisposition towards social justice in spatial planning dictates an equitable regional transference of goods and services among the complementary regions. However, having inherited a colonial transportation-communication system, whose inception was governed by strategic and exploitative whims, most African states are faced with the problem of devising appropriate intra and inter-regional infrastructure that is conducive to equitable regional economic development. Such infrastructural restructuring is a sine qua non for development because, as Milton Santos correctly points out:

> The importance of an individual as a producer or consumer also depends on his position in space and varies as a function of changes in spatial structure

That is, the individual's capability to reach and consume those goods and services essential to development depends heavily on his relative accessibility facilitated by communication and transportation facilities. In this research the emphasis is mainly on the road transportation system because of the former's relative speed, regularity and flexibility.

Other researchers on regional development have consistently attested to the crucial role of transportation infrastructure to regional development by maintaining that it facilitates:

> rapid circulation among the various parts of the region - (and that it) is the nervous system of a regional organism and is absolutely vital to its survival.

Empirical evidence from most countries seems to underline these observations. For example, in Zambia, it has now been accepted that rural transportation difficulties represented a major obstacle to rural development during the First National Development Plan and that within the country, interruptions to and lack of transportation by road in the rural areas have frustrated development in the rural areas.

Closely associated with the main transportation system of tropical Africa has been the emergence of the expatriate-initiated urban places. Coastal harbours, sidings and junction settlements have all sprung up in response to water, rail and/or road transportation modes, respectively. Of course certain centres have emerged and grown at the terminii of the transportation modes particularly where primary resources were being exploited for subsequent

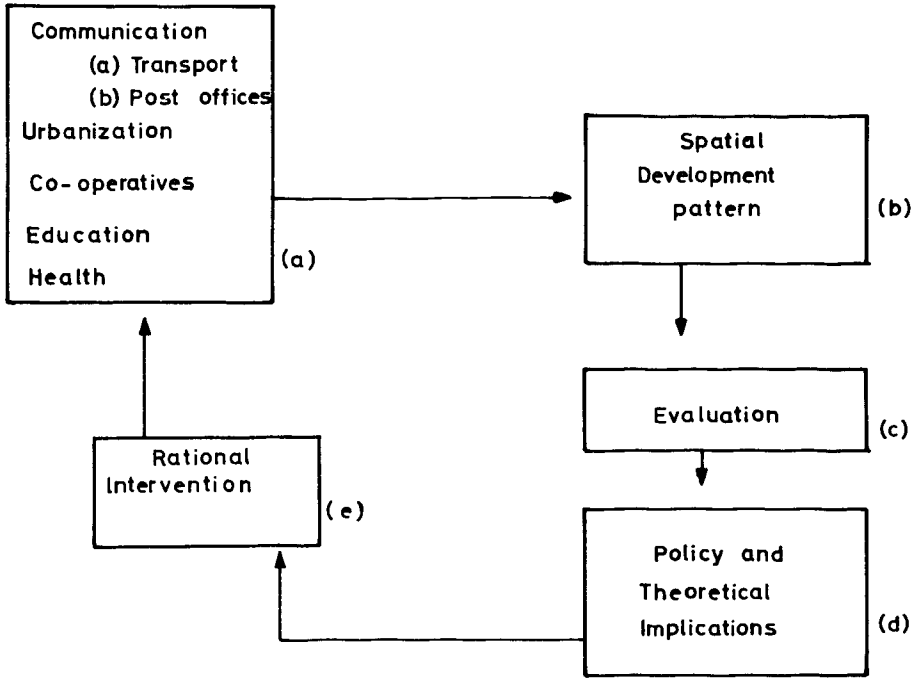

Fig: 1 RATIONALIZED SPATIAL ORGANIZATION

shipment to the metropolitan countries. By and large the main colonial urban nodes can be veritably termed parasitic. Filani, for instance, notes that:

> they continue to draw the resources of their hinterlands, producing the regional inequalities predominating in the African space-economy today.

Similar remarks have been made by Harvey, particularly with reference to the investment-monopolization tendencies of these urban centres on industrial, capital, public services, employment opportunities, medical and educational facilities. To quote his observation, he said:

> Bamako, the capital of Mali, has 54 percent of all wage-earners in the country, 62 percent of national production, about 48 percent of the profit from all businesses, and it also consumes 45 percent of all imported oil products, 33 percent of all imported cement, and about 50 percent of all imported goods. Addis Ababa has about 48 percent of the doctors, 59 precent of the nurses and 31 percent of the available hospital beds in Ethiopia. Doula in the Cameroons has about 33 precent of all commercial banks, 50 precent of all hospital beds and about 80 percent of all business establishments.

Similar views have been expressed by Jayarajan and Khonje about Zambia. They pointed out that:

> Higher order services such as specialized health facilities, education, recreation and entertainment facilities are at the moment available only in the larger urban areas on-the-line of rail.

In 1969, 97.3 percent of the total employment in the industrial sector and 84 percent of total national employment was to be found in the most urbanized provinces of Zambia.

Most of what is recorded in the preceding paragraph are graphic illustrations of the detrimental impacts of city primacy on systemic regional development: that is, the evils of spatial concentration on one or two major towns of socio-economic infrastructure. Now, these conditions are exarcebated by urban implosion. This, basically, is an induced ratchet effect whereby the larger urban nodes become progressively better interconnected whilst the smaller centres get systematically relegated into remoteness. These two forces, primary and implosion, conspire to frustrate and strangulate the economic development of the small rural service centres and their hinterlands. The welfare gap between urban and rural areas in thus broadened. Devolution of investments and services to the smaller urban places or development centres could reduce this gap.

Several other suggestions have been made as to how to bridge the ever-widening income differential between rural and urban areas in tropical Africa. There seems to be a general consensus that rural incomes could be upgraded to parity levels with urban incomes through an efficient agricultural system. Within this context there has been much reference to the co-operative movement as an appropriate institution for achieving these ends. It has been noted, for example, that where such co-operatives are efficiently managed:

> they have an important contribution to make in the improvement of rural production, marketing, processing, credit and input supplies, thereby enhancing fair returns to the producers and facilitating capital mobilization in the rural areas by strengthening the capacity of farmers to save.

Two main types of co-operatives exist on the African continent: the first is the production type whereas the second is the marketing one. It is the latter which seems to be predominant today. It serves two basic complementary functions, that is, it functions as a dissemination point of imported goods, and also as a bulking point for locally-produced goods for external shipment. Its developmental implications are implicit in Good's remarks on the role of marketing systems in integrating complementary functional regions. He said:

> These functions (importing and bulking) focus our attention on the interconnections and external associations of markets: the movement and aggregation of people, goods, money and information in and among specific groups of markets, and the linkages between town and country, areas of surplus and deficit.

The potential of co-operatives in facilitating positive rural development is further underscored by Berry who has said:

> There is good reason to believe that the organization of efficient marketing procedures, coupled with the development of more rational road networks, will be one of the key factors in promoting rural economic development.[2]

There is great scope for increasing rural welfare levels through agricultural production co-operatives. Empirical evidence has linked massive rural emigration with lagging regions in the space economies of Africa. Brand has, for instance, shown that the relatively depressed Northern and Volta Regions of Ghana, constituted the bulk of the immigrants to Accra, in 1963.[3] Similar observations have been made by Colson in the Zambian case. She noted a dramatic fall in the rate of emigration from certain rural areas once cash cropping had developed in such regions during the late 1920 and early 1930s.[4] As a mechanism of anchoring or stabilizing rural population to facilitate rural development, agricultural co-operatives thus seem to be a congenial alternative. When thinking about co-operatives capable of expediting equitable regional development, "efficiency" becomes a crucial watchword. Such efficiency could be facilitated by appropriate socio-economic infrastructure, for example, sound telecommunication and transportation networks to facilitate both intra and inter-regional interaction for the dissemination of inputs and outputs, adequate health care facilities, and a basic but relevant educational system designed to graft the people onto their environment rather than alienating them from it. Apart from a more or less ubiquitous transportation infrastructure, such facilities could be provided at strategically located growth points designed to serve the currently peripheral areas. Jayarajan and Khonje have suggested possible locations for such centres in Zambia.

Research Design

The preceding section has attempted to present a concise discussion of a set of selected development indicators. Spatial planning units in Zambia based on their level of development will be isolated using these indicators as a functional basis. This is done in order to incorporate the spatial-sectoral dimension which, according to the Third National Development Plan, was ignored by the First and Second National Development Plans, to the detriment of the lagging regions.

Spatially, the Third National Development Plan has adopted the existing Provincial boundaries as its planning regions for minimizing inter-regional socio-economic disparities. The Plan however concedes the existence of considerable intra-regional disparaties. In other words, looking at the development problem at the Provincial level gives an aggregate of misleading scenario which masks substantial intra-provincial variation. It is thus essential to disaggregate the spatial dimensions of the problem and delineate it at the micro-level, assuming that the Province and the Country represent the meso and macro-levels of the space economy, respectively. Hence the adoption of the District rather than the Province here as the basic unit of analysis. Policywise, this is crucial because it facilitates the selection of least developed, least confounded spatial units for development objectively.

Sectorally, the Third National Development Plan tries to resolve the problem of development within the context of development disparity indicators. The basic premise offered in this research is that these development indicators must be viewed as a composite or systemic phenomenon rather than atomistically. As such, once a lagging region is identified, it must be subjected to some form of structural overhaul on all fronts rather than to piecemeal band-aid treatment. This is in line with the Concept of Integrated Rural Development Programme as stipulated in the TNDP.

Specifically then, Zambia's 43 Districts were utilized as basic spatial units for the analysis. Data on the following variables, which have been discussed above, were obtained per district from relevant government ministries:

(a) Population for 1978

(b) Number of Health Units, i.e. hospitals and health centres

(c) Number of registered co-operatives

(d) Number of primary schools

(e) Number of post offices

(f) Length of Class I roads, i.e. bituminized with a

10.1 - 13.3m formation and a

6.1 - 7.3m carriage width

(g) Number of urban places, i.e. service centres with a population of over 4,000.

Using the 1978 population figures, (b) and (f) were then converted to population pressure measures on services, that is, the number of thousands of

people to which each service unit was available.

The aim of this research, as already indicated, was to extract basic components which span development, rationalize their spatial expression, and then analyse the policy implications of the observed surface configuration. Factor analysis was used to facilitate an objective classification of the forty-three Districts based on the selected indicators of regional development. Such a classification is crucial for planning purposes because the needy areas can then be identified based on how they score on the development spectrum. For instance, within the humanistic context the ideal would be to upgrade the material welfare of the least developed Districts to parity levels with the rest of the country.

An exhaustive and mathematical explanation of what factor analysis is need not detain us here. However, an intuitive knowledge of what the technique involves is essential for the understanding of the subsequent discussion. Factor analysis is a simple procedure for classification or taxonomy which is very useful for isolating k fundamental factors or dimensions from a large set of m variables or characteristics such as regional development indicators measured on n observations, such as districts. Thus by means of factor analysis an n x m [A] matrix is reduced to an n x k [B] factor score matrix, where k<n. This matrix shows how each observation scores on the respective factors. The relative importance of the original variables to the respective factors can be assessed from their loadings on an m x k [F] factor matrix. The relative importance of the factors in explaining the total variation of the original data can be gauged by the amount of variance explained by the respective dimensions. Finally, the roots of matrix [A] are known as the eigenvalues. The factor matrix is crucial for identifying and naming the factors, on the basis of loadings magnitudes, whereas the factor score matrix is critical for clustering or grouping the districts.

Only two factors, with eigenvalues equal or greater than unity were utilized in this paper, Table 1 and 2. Cumulatively, these explained 54 percent of the variation in the data on development. The factor scores for each district on each factor were then graphed on Fugure 2. Five apparent clusters were identified and mapped on Figure 3.

Report on Findings: A description and Explanation of the Regional Development Surface

Figure 3 is a regional surface configuration of the mathematically-derived clusters from figure 2. Five levels of regional development are apparent. These are analysed below.

The best developed areas all have main urban centres, each having a population above 200,000. The Lusaka sub-region, with the nation's administrative capital, also dominates in other spheres such as commerce, manufacturing, education, health and transportation-related activities. The Kitwe and Chingola sub-regions are very important mining, manufacturing, transportation and in the case of Kitwe, educational areas. One city-region, Ndola, and two Copperbelt municipalities, Mufulira and Chililabombwe occupy the second level. The Ndola city region performs not only administrative but also commercial, mining, manufacturing and transportation fuctions. The other two sub-areas, at this level, have crucial mining, commercial, transportation

Fig. 2 DISTRICT CLUSTERS IN MATHEMATICAL SPACE

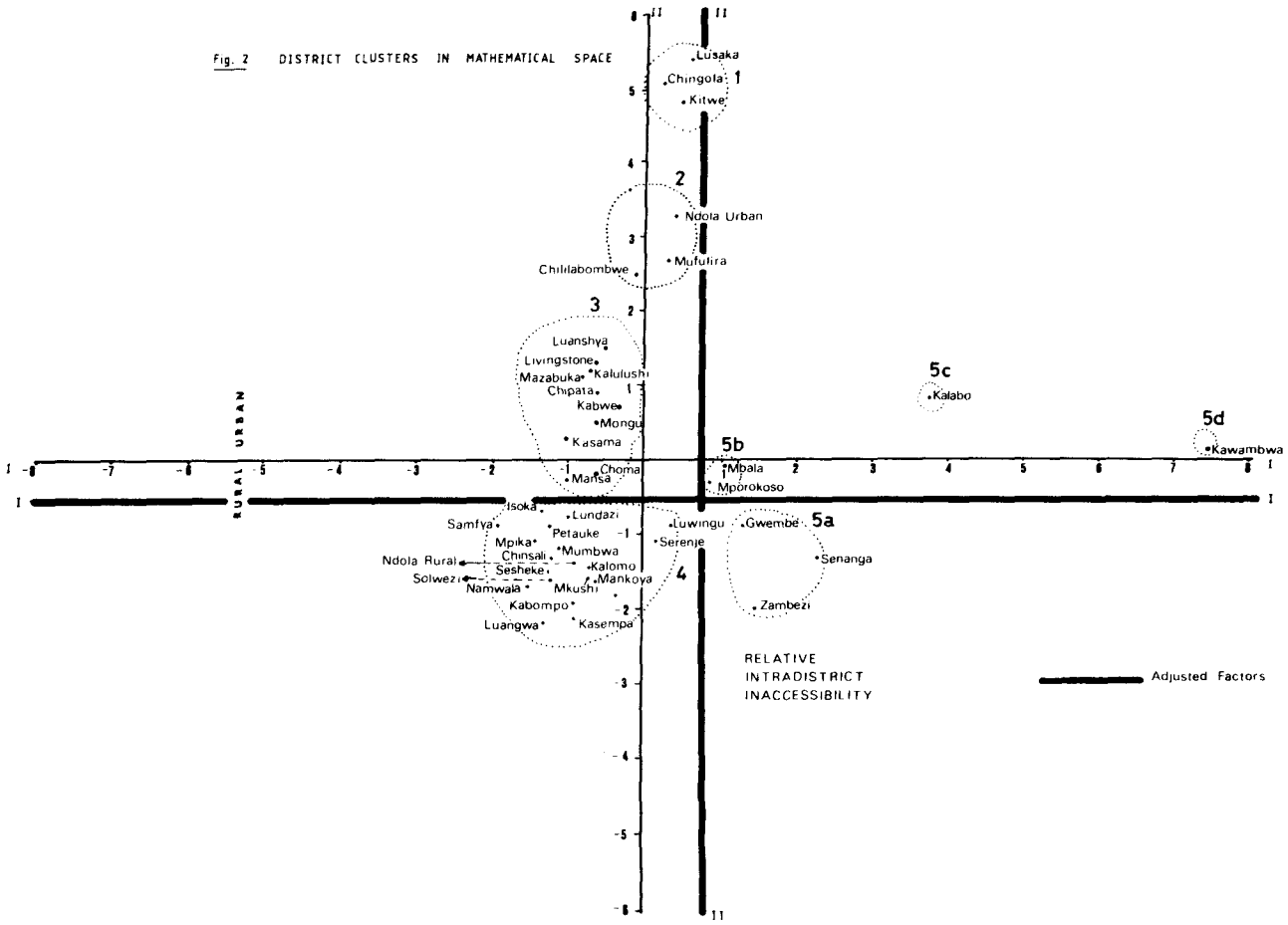

Fig: 3 REGIONAL EXPRESSION OF MATHEMATICALLY-DERIVED CLUSTERS

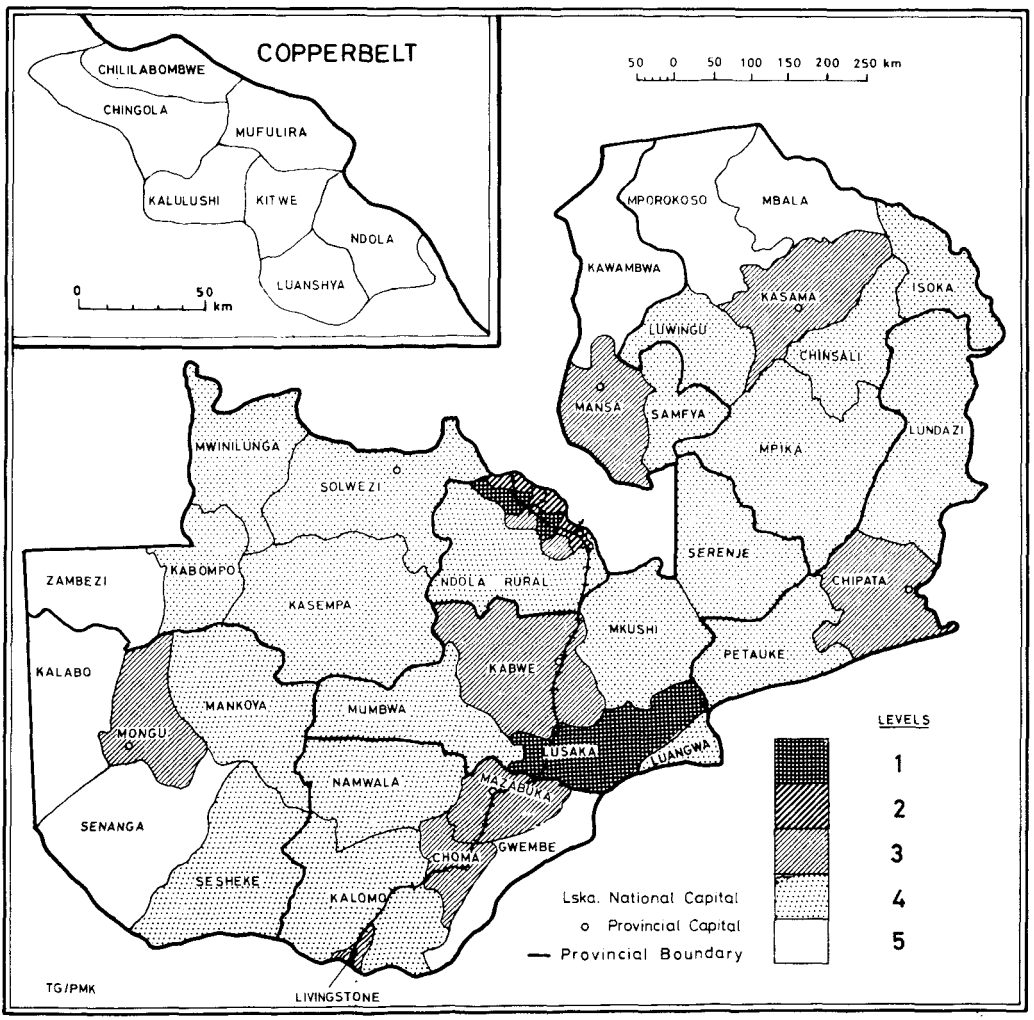

TABLE 1: MATRIX OF FACTOR LOADINGS

VARIABLE	COMMUNALITY	FACTOR I	FACTOR II	FACTOR III
POST OFFICES	0.469	0.066	0.095	0.675
CO-OPERATIVES	0.888	0.930	-0.121	-0.029
HEALTH	0.574	0.426	0.051	0.028
EDUCATION	0.790	0.217	0.860	0.064
URBAN	0.483	0.224	0.652	0.085
ACCESSIBILITY	0.545	0.708	-0.175	0.115
EIGENVALUES		9.143	5.906	0.930
VARIANCE		24.519	29.827	8.034

TABLE 2: MATRIX OF FACTOR SCORES

DISTRICT	FACTOR I	FACTOR II	FACTOR III
LSK	0.6282	5.4285	0.2249
KBWE	-0.2662	0.6729	-0.2162
LNGW	-1.2701	-2.2266	-0.8318
MKSH	-0.6533	-1.6298	0.5755
MBWA	-1.1157	-1.2095	0.4468
SRJE	0.1130	-1.0848	-0.3726
CBBW	-0.0597	2.5417	-0.4527
CHGL	0.1914	5.1026	0.1112
KLSH	-0.6068	1.3263	-0.2726
KTWE	0.5233	4.8247	-0.1282
LSHA	0.3278	1.5630	-0.1736
MFLR	0.3313	2.7313	-0.2552
NDLR	-0.9039	-1.3566	0.8456
NDLU	0.3789	3.2926	0.6788
CPTA	-0.5866	0.9429	0.1476
LDAZ	-1.0309	-0.8453	0.0326

TABLE 2: MATRIX OF FACTOR SCORES (continuation)

DISTRICT	FACTOR I	FACTOR II	FACTOR III
PTUK	-1.2492	-0.8756	-0.1664
KWBA	7.4592	-0.0550	-0.1902
MASA	-0.9813	-0.3134	-0.1457
SFYA	1.9003	-0.8630	0.1124
ZMBZ	1.5483	-2.0089	-0.4710
KPPO	-0.8797	-1.8798	-0.4567
KSMP	-0.8520	-2.0892	-0.4689
MWIG	-0.2809	-1.7682	-0.4468
SLWZ	-1.2272	-1.6067	0.4569
CNSL	-1.1869	-1.3110	-0.2784
SOKA	-0.8673	-0.7437	-0.3551
KSMA	-0.9815	0.3076	-0.1186
LWNG	0.3569	-0.8822	-0.2733
MBLA	1.0551	-0.1324	0.2521
PIKA	-1.3717	-1.0758	-0.2419
MPSK	0.8953	-0.2691	-0.2622
CHMA	-0.2632	-0.1752	-0.0007
GWEB	1.2914	-0.8502	-0.4539
KLOM	-0.6924	-1.4101	-0.5208
LVGT	-0.5029	1.5184	-0.4938
MZBK	-0.6867	1.1603	-0.0736
NMWL	1.4971	1.7239	0.5349
KLBO	3.7156	0.8394	2.0698
MKYA	0.5979	1.5955	0.3045
MNGU	0.5655	0.5235	2.8165
SNGA	2.2776	1.2727	1.7482
SHKE	1.2315	1.5163	0.3077

and manufacturing activities. In brief, levels 1 and 2 constitute Zambia's main urban areas and are a receptacle for well over 65% of the nation's urbanities.

Within the third level of development are: the smallest Copperbelt Districts such as Kalulushi and Luanshya; the advanced farming districts such as Choma, Mazabuka, and Chipata; the main gateway districts such as Livingstone in the south and Chipata in the east; and the seats of provincial administration such as Mazabuka, Mongu, Kasama, Mansa, and Chipata. All in all, the majority of these areas have superior agricultural, marketing, and service centres for the nation's main industrial and commercial farming belt. As in the case of 1 and 2 these regions are relatively well-endowed with the type of socio-economic infrastructure for development discussed earlier.

Level 4 and 5 consist, in the main, of what are generally called the rural districts. Their location intimates a distance decay effect in regional development parameters from the core areas. Accordingly, it is the peripheral areas such as western edges of Western Province and northern margins of Luapula and Northern Province which appear least developed. From a humanistic policy view-point, these are the areas which need immediate attention particularly those in Level 5.

The observed spatial pattern of development just described can be readily interpreted as a manifestation of ideological manipulation of the biophysical endowments of Zambia by successive executive decision-makers. This intrinsic linkage between ideology and spatial organization has to be appreciated prior to any enlightened rationalization of the observed development surface configuration.

Basically, the two ideologies we have in mind here are the free enterprise type and the humanistic type. The relative assessment of the space economy by these two ideological typologies has varied, hence the actual or potential differences on regional development. Essentially, what is depicted in Figure 3 is a legacy of the cumulative dynamics of the free enterprise system. This premise will be corroborated by the following concise historical survey of the country's regional development before and after independence.

As early as 1889 a London-based director of British South Africa Company, a chartered company formed to administer and develop the territories of Central Africa for the benefit of its shareholders, made the following remark:

> The problem of Northern Rhodesia is not a colonization problem. It is the problem of how best to develop a great estate on scientific lines so that it may be made to yield the maximum to its owner.

Accordingly, Rhodes and his associates selected to invest in those sectors from which expected returns would be consistent and substantial; mineral exploitation constituted such a venture. The mines had a spawning effect on other infrastructural development such as sound communication transportation network essential for bringing in the required inputs and discharging outputs and other socio-economic services. Several other related industries such as power, engineering, construction, steel, chemical and cement firms emerged along the line-of-rail corridor. The absence of spur lines and feeder-road

system rendered highly localized farming to be a very profitable undertaking. All these precedents, in sum, set the basis for the spatial development pattern depicted by Figure 3. Bates has thus correctly stated:

> This pattern of investment (pre-independence) rendered the Northern and Eastern Provinces, and the North-western Province and Barotseland pheripheral to the line of rail economy.

There is ample evidence to support the view that some of these peripheral areas were actually deliberately underdeveloped to encourage their male population to emigrate and work in modern commercial enclaves.

The change of executive control from the British South Africa Company to British imperial rule was irrelevant to the prevailing development pattern because these two administrative entities shared identical ideological orientations. First, despite its nominal commitment to enhancing the welfare of the indigenous peoples of then Northern Rhodesia, the British government now and again expended the bulk of available development inputs on the line-of-rail corridor. The 1953 revision of the 1947 ten-year Development Plan whereby the revenue which had been assigned to rural development was halved because of the demand by the private sector for socio-economic infrastructural development along the line-of-rail Districts is a glaring case in point of Britain's over-commitment to the free enterprise system at the expense of the natives who were concentrated in the peripheral districts. The prevailing land tenure systems further frustrated any efforts aimed at improving the economic welfare of peasant farmers. Through land-alienation only those farmers who were adjacent to the transportation corridor owned their land. Logically, these farmers could confidently invest heavily on their land unlike the off-rail peasants whose land was subject to multiple communal claims. When seeking loans the freehold farmers could conveniently use their property as collateral. The cumulative result of these factors was that the on-the-rail farmers received preferential treatment in terms of loans and credit facilities and transportation subsidies. This, in essence, spelt the differential between the on-the-rail and the off-the-rail farmers.

The post-independence government obtained 95% of its revenues from the Southern, Central and Copperbelt sub-regions. Initially, it thus found itself bound to spend investment allocations from where it derived its revenues. Two issues militated against this rationalization however. First, the bulk of the electorate, unlike in the previous regimes, was rural. Secondly, President Kaunda's humanistic ideology embraced even the simple villager by emphasising the equality and dignity of all men. Consequently, he advocated an expansion of rural education, rural health care, rural sanitation, building and farming co-operatives, extension of credit facilities to rural areas, and the collection and distribution facilities to rural producers.

Such infrastructure should have constituted a basic framework for the diffusion of economic developmental impulses to the hitherto poverty-bound peripheries. Indeed, by 1971 the spatial manifestation of the humanistic ideology were beginning to show on the formerly benignly neglected parts of the developmental surface.[5] However, because of their ideological confusion and bureaucratic pathology, some administrative office-bearers, for the most

part, frustrated the potential spatial impact of Kaunda's philosophy which was aimed at redressing the colonial regional imbalances. A graphic case in point is illustrated by a dismall failure of most co-operatives. Bates has cited several reasons for their untoward plight. These include delegation of responsibility to unskilled and untrained, non-chalatant extention workers and other administrative personnel, inaccessibility of rural producers, particularly during the rainy season due to an inferior road network, and finally, the need by villagers for short-term returns from agricultural investments. Bates has thus correctly concluded that intervention of the public sector in Zambia has apparently failed to generate significant rural incomes where private market forces have failed to function.

Policy Implications of the Findings and Concluding Remarks

This study has demonstrated that regional economic development in Zambian displays a spatial bias mainly in favour of the-line-of-rail districts. In the spirit of humanism the First National Development Plan asserted its resolve to rectify this imbalanced development inherited from the colonial past. Rural development appeared to be the catchphrase. This resulted in substantial estimates being, theoretically, allocated to roads, schools, hospitals, clinics and other social services deemed pertinent to the raising of the living standards in rural districts. Free enterprise rationalization, however, prevailed over those spatial allocation socio-political ideals, in actual practice. Consequently, as much as 82% of the total expenditure was actually spent on 50% of the country's population, that is, mainly those on-the-rail provinces. The remaining 18% had to be shared among the rural provinces. The justification for this obviously mismatched allocation is clearly couched in free enterprise ideological terms, namely:

> This high percentage (on-the-line-of-rail) does not signify any particularity on the part of planners. In (free enterprise) planning, there is a need to apply scarce resources to areas and lines of investment which offer the best economic returns.

The Second National Development Plan (SNDP) was, supposedly, intended to secure comprehensive regional development including raising of rural incomes and the creation of more social service facilities in the rural areas. This deliberate emphasis on rural development was designed to rectify the persistent lopsided development inherited from the pre-independence era. The rural sector objectives and policies as elaborated in the SNDP are:

(1) to create in the rural areas new opportunities for employment and income and to improve infrastructure related to increased rural productivity in order to counteract migration to the urban areas;

(2) to improve nutritional standards by means of increased prevention and consumption of protein and protective foods for local rural consumption;

(3) to develop self-sufficiency in staple foodstuffs and to reduce the growing dependence on imports of higher value commodities;

(4) to improve marketing, processing, storage, input supply and credit facilities.

The necessary framework within which these priority objectives could be attained was seen to be vertical development. This implied in brief, that the Government had decided to give due consideration to optimal landuse based on soil and climate, which together with communication and access to market, would express comparative advantage. Such areas for concentration of investment were termed Intensive Development zones (IDZ). A "Designated IDZ will be defined areas of high natural potential within which priority will be given to infrastructure and integrated services leading directly to increased productivity. A serious reflection on the IDZ policy reveals that it was inadvertently counterpoised to the very aims for which it was designed. With time it became clear that:

> ... it was beset with some development constraints and its confinement to only a few areas was in conflict with egalitarian objectives.

Strictly speaking, its failure was not simply an outcome of its confinement to only a few areas as such but rather because such areas had been selected because they had good climate, soils and transportation. Such attributes tended to be coextensive with the better already developed areas leaving the areas in downward transition to the negative sway of the vicious cycle of cumulative causation as envisaged by Myrdal.

The TNDP is in danger of falling into the same trap as the SNDP in its attempt to achieve equitable regional development. In its regional development policies the TNDP has identified a three-tire system of centres of development. At the higher level are the primary centres of development consisting of all Provincial capitals and a few big towns. As the intermediate level are the sub-centres of development constituted by all the district headquarters and the other larger townships. The tertiary level is to be made up of village development centres. There are two fundamental criteria for the selection of such centres, viz., good arable agricultural soils and adequate water supply for domestic uses and agricultural production. Minimum requirements include a population of 2000 - 5000 within a 15 km. radius of the selected village, accessibility by at least Class III gravel road and a primary school.

Two main problems are evident from this strategy. First, there seems to be much emphasis in further investing in those areas which already occupy the highest levels of development depicted in Figure 3. There is thus a danger of aggravating the developmental gap between the upper level and lower level areas. The ideal step would be to freeze development at the upper level and to encourage dispersion of investment to lower level regions. And, since the centres at levels 1 and 2 tend to be externally-oriented, the logical thing to do would be to attempt to promote activities which integrate them with the rest of the space economy.

The second problem relates to fundamental criteria for the selection of village development centres. Surely, there is need to broaden the comparative advantage criteria based on other material resources such as forestry, fishing, tourism besides agricultural potential. Water is indeed critical.

This study has discussed the importance of certain indicators, based on the Third National Development Plan, for regional development in general. The spatial dimension of these indicators has been delineated and regional

differentials rationalized for Zambia.

Policywise, the study has attempted to provide a framework within which the allocation of scarce resources can be articulated on the basis of need. This has been achieved by objectively delimiting sectoral-spatial planning units on the basis of a classification procedure based on development indicators collected on the District basis.

FOOTNOTES

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