

- GUILLAUME, M.: Les aménagements hydro-agricoles de riziculture et de culture de décrue dans la vallée du Niger. *L'agronomie tropicale*, 1, 1960, S. 73–91.
- HARRISON-CHURCH, R. J.: *West-Africa*. Suffolk, 1968.
- HERRMANN, R.: Methoden und Ergebnisse einer hydrogeographischen Landesaufnahme von Ostnigeria. *Erdkunde*, Bd. XXII, H. 2, 1968, S. 89–100.
- JANKE, B.: Naturpotential und Landnutzung im Nigertal bei Niamey/Rep. Niger. *Jahrb. d. Geogr. Ges. Hannover für 1972*, Hannover, 1973.
- : Regenfeldbau und Bewässerungsfeldbau im Niger und ihre Bedeutung besonders in Dürrezeiten. *Afrika-Spectrum*, H. 3, 1974, S. 268–277.
- LAUER, W.: Vom Wesen der Tropen. *Akad. d. Wiss. u. d. Lit., Abh. math.-naturwiss. Kl.*, Nr. 3, 1975.
- LEMOINE, L. u. J. C. PRAT: Cartes d'évapotranspiration potentielle. Comité interafr. d'études hydrauliques, Série climatologie, Ouagadougou, 1972.
- MANSHARD, W.: Der Ablauf der Regenzeit in Westafrika dargestellt an Beispielen aus Ghana. *Gießener Geogr. Schr.*, H. 2, 1962, S. 47–81.
- MENSCHING, H.: Der Sahel in Westafrika. *Hamburger Geogr. Stud.*, H. 24, 1971, S. 61–73.
- : Aktuelle Morphodynamik im afrikanischen Sahel. *Abh. d. Akad. d. Wiss. in Göttingen, Math.-phys. Kl.*, III, 29, 1974, S. 22–38.
- MOHR, B.: Die Reiskultur in Westafrika. *Afrika-Studien* Nr. 44, IFO-Inst. f. Wirtschaftsforschung, München, 1969.
- MORGAN, W. u. PUGH, J. G.: *West-Africa*. London, 1969.
- PARDÉ, M.: *Fleuves et rivières*. Collection U, Paris, 1968.
- RODIER, J.: Régimes hydrologiques de l'Afrique noire à l'Ouest du Congo. ORSTOM, Paris, 1964.
- SALEY, M.: Perspectives de couverture des besoins alimentaires au Niger. *Nigerama*, Nr. 1, 1974, S. 55–59.
- o. V.: Etudes sur les possibilités d'aménagement hydro-agricole de la vallée du Niger. Notes hydrologiques, Etudes sur le terrain et études économiques. IFAGRARIA, Rom 1964 a.
- o. V.: Aménagement hydro-agricole de la cuvette de Kou-toukalé. Etudes pédologiques des cuvettes et des terrasses. IFAGRARIA, Rom, 1964 b.
- o. V.: Etude pédologique du Niger occidental. Rapport général. ORSTOM, Dakar-Hann, 1965.
- o. V.: Aménagement hydro-agricole de terrasses et cuvettes dans la vallée du fleuve Niger. SOGETHA, Grenoble, 1970 a.
- o. V.: Monographie hydrologique du Bassin du Niger. Le Niger moyen. ORSTOM, Paris, 1970 b.
- o. V.: Annuaire hydrologique du Niger. *Jahresberichte bis 1974*, ORSTOM, Paris, 1974.

THE SPHERE OF INFLUENCE OF KHARTOUM CONURBATION, SUDAN

With 6 figures

EL-SAYED EL-BUSHRA

Zusammenfassung: Die Einflußsphäre der Konurbation von Khartum, Sudan.

Die Konurbation von Khartum (Khartum, Khartum Nord und Omdurman) liegt an einem Knotenpunkt, der alle nationalen Routen beherrscht. Die Leichtigkeit der Kommunikation mit dem Rest des Landes hat es der Dreier-Kapitale möglich gemacht, kommerzielle, edukative, medizinische und administrative Dienste sowohl auf den regionalen als auch auf den nationalen Bereich auszudehnen. Mit der Verbesserung der Kommunikationsmittel wird der Einfluß der Konurbation auf das übrige Land notwendigerweise wachsen. Eine genaue Untersuchung von in Feldarbeit erhobenen Daten hat deutlich gemacht, daß die Einflußsphäre der Dreier-Stadt aus einem primären und einem sekundären Hinterland besteht. Das erste, das sich auf ein Gebiet innerhalb eines Radius von 70 km erstreckt, hat starke soziale und ökonomische Bindungen zum urbanen Komplex, während im zweiten Fall, der das ganze Land einschließt, diese Bindungen ziemlich schwach sind. Die Studie hat auch gezeigt, daß einige der Indikatoren, die bei der Abgrenzung des Hinterlandes von Städten von europäischen und amerikanischen Geographen benutzt werden, im Falle Khartums nicht anwendbar sind auf Grund von Unterschieden in den sozio-ökonomischen Gegebenheiten.

Nichtsdestoweniger ist dennoch ein Versuch unternommen worden, das Hospital- und das Großhandelsgebiet der Dreier-Stadt zu bestimmen.

Khartoum conurbation, the national capital of the Democratic Republic of the Sudan, is made up of the three cities of Khartoum, Khartoum North and Omdurman situated around the confluence of the Blue and White Niles (Fig. 1). This large urban agglomeration is the most dominant in the nation culturally, politically, economically and demographically. The Three Towns form the largest marketing and distributing centre in the country, and provide specialized shopping, medical, and educational facilities not only for their own region, but also for the nation at large. So as to render these services for a large number of people throughout the country, the urban complex has, during the last seventy years, developed a well-organized network of communications. The Khartoum conurbation is located at a nodal point commanding all national routes, and as such it is the most accessible by river, rail, road and air (DOXIADIS, 1959). Although for a vast country

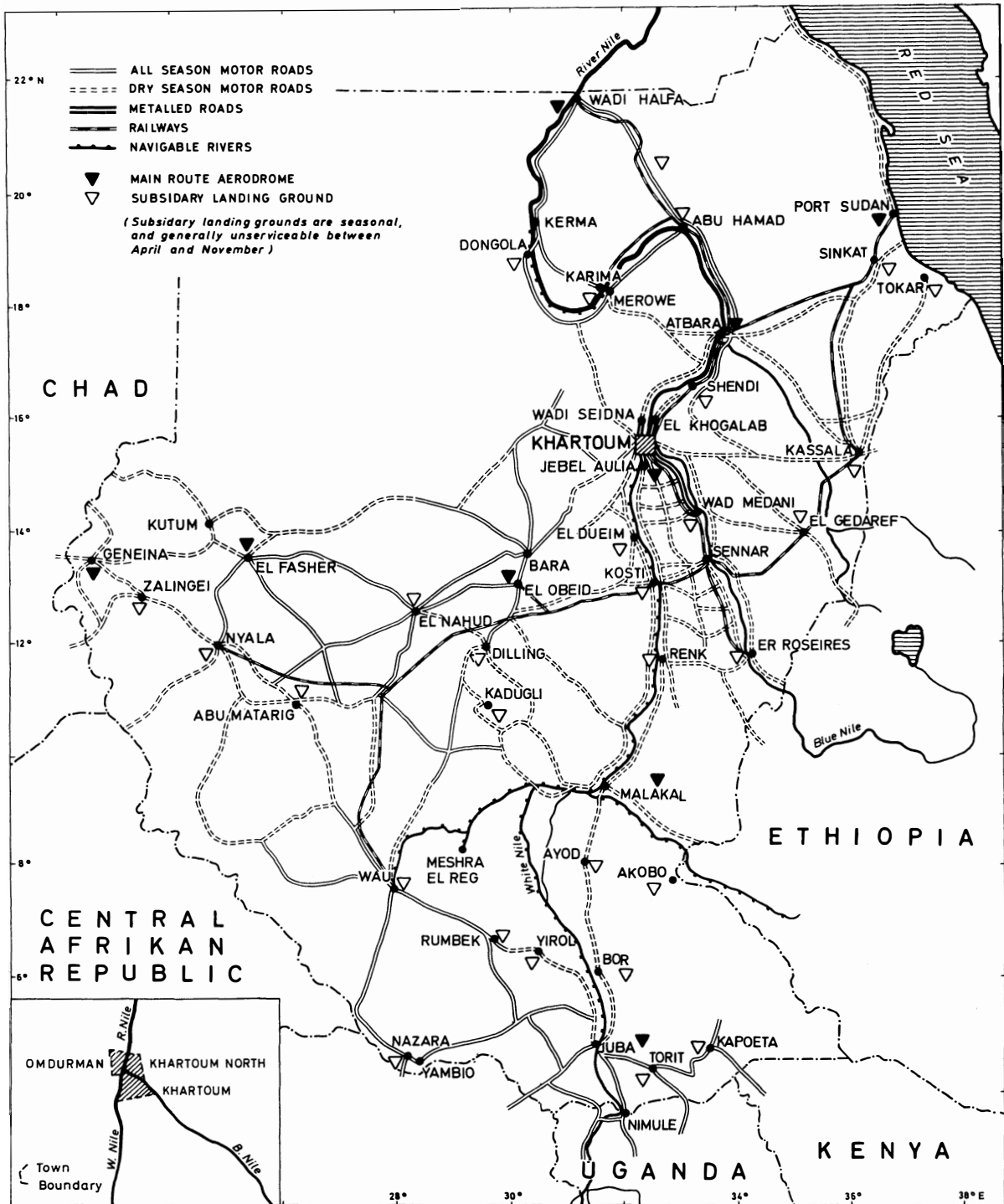


Fig. 1: Sudan: communications

like the Sudan the existing means of transport are inadequate, the urban area enjoys the easiest and quickest connections with the rest of the country. With the continuous improvements in the media of commu-

nications, the impact of the conurbation on the surrounding countryside is bound to increase. A short review of the various means of communications operating from the capital city will throw some light on

the hinterland analysis which follows. Using the data collected from over one hundred villages in the surrounding region of Khartoum Urban Complex, an attempt will be made in this paper to delimit some of its service areas.

Accessibility

Located at the junction of the Blue and White Niles, the Khartoum settlements have always been easy to approach from practically all directions. Although the Nile is obstructed by a series of rapids to the north of the confluence, the White Nile provides an important link between Khartoum and the Southern Sudan. The city is an important river port and handles most of the traffic originating in the southern region. Khartoum has once a week a steamer service with Juba located at 1,745 Km. to the south. The Blue Nile, on the other hand, is of little use to steamer transport because of the marked seasonality of its flow and the fact that its course is obstructed by two dams neither of which has locks (HILL, 1965). Nevertheless, a number of locally built craft use the river to transport goods from the Sennar and Wad Medani areas to Khartoum (Fig. 1).

The railhead reached Khartoum over seventy years ago. At present the urban area is easily accessible from the various parts of the country, and forms an important nerve centre of rail traffic in the Sudan. There are daily rail services between Khartoum and other major centres, and no less than 160 trains leave Khartoum Central Station each week to the various parts of the country. Rail transport for both passengers and freight is the most important over the long distance,

while road transport is by far dominant in the immediate hinterland of the Three Towns (Fig. 1). Over 500 buses leave Khartoum urban area each week to other centres in the country indicating the significance

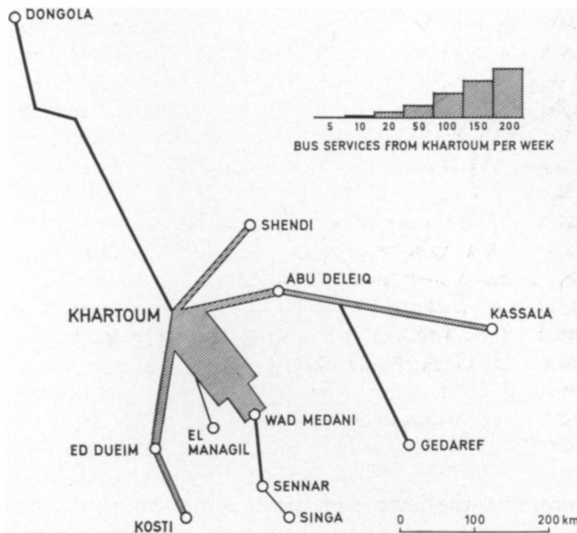


Fig. 2: Long distance bus services from Khartoum conurbation

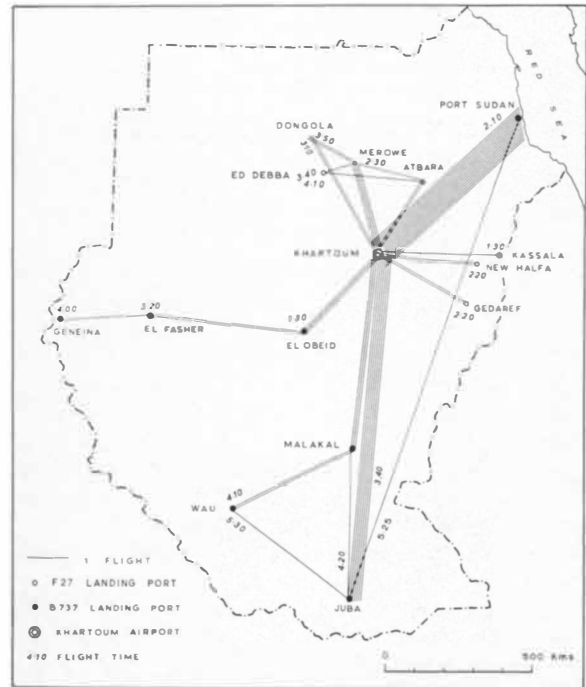


Fig. 3: Weekly air traffic from Khartoum

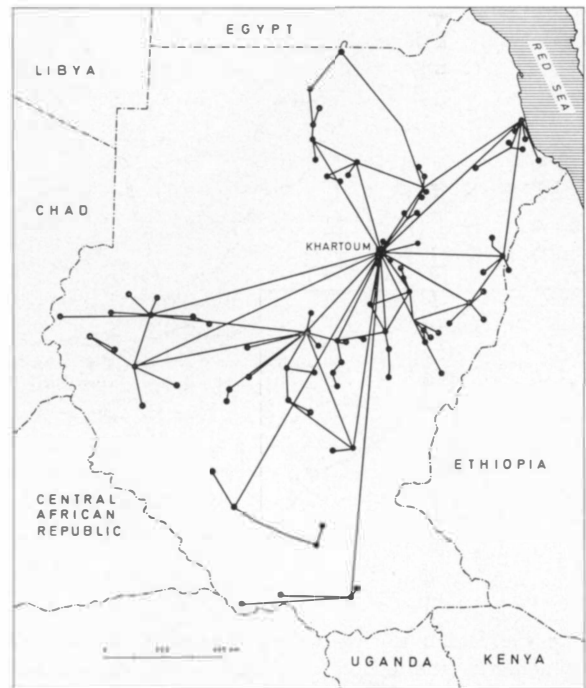


Fig. 4: Sudan: Telephone traffic (trunk lines)

of motor-transport (Fig. 2). Although information on the volume of motor traffic is lacking, the number of both buses and trucks entering the Three Towns is considerable. Furthermore, there are over 250 buses operating between the urban complex and other settlements in the immediate hinterland. The daily commuters usually come to work, attend school, pay a visit to one of the hospitals or clinics, see a private doctor, do some shopping, settle a dispute in the courts of law, or simply come for entertainment. About 3,000 lorries engage in the transfer of fresh vegetables, fruits, milk, eggs, chickens and building materials from the surrounding region into the Three Towns.

Considering that both distance and climate affect the running of rail and road services between Khartoum conurbation and the rest of the nation, air transport becomes of great importance. There are over seventy flights per week from Khartoum to the various parts of the country (Fig. 3), thereby emphasising the nodality of the capital city. Moreover, almost all settlements in the Sudan are directly or indirectly connected with the Capital through a network of telephone and telegram lines, and the main radio and television stations are to be found at Omdurman (Fig. 4). With the widespread use of transistor radios, the influence of Radio Omdurman has penetrated deep into every corner in the countryside. The TV services which now cover Khartoum and Gezira Provinces bring extensive areas under the influence of the Three Towns. Moreover, the fact that there is almost 100% concentration of press and publications in the Khartoum area, is another manifestation of the cultural, political and economic leadership of the triple capital.

Although there is no organized circulation of newspapers in the immediate hinterland of the Three Towns, as in the case of Western cities, daily papers are read by some villagers within a radius of 50 km. from the urban complex. Some of the villagers who provide the capital with its daily supplies of vegetables and milk, return home with one of the daily papers. Other major centres in the Sudan receive their daily papers from Khartoum by bus or air. However, the circulation of newspapers and other publications in both urban and rural areas is seriously limited by the low level of literacy. As such circulation of newspapers cannot be used as an index to delimit the hinterland of the Three Towns.

This brief review of the various means of communications has demonstrated that the Khartoum conurbation is the most accessible by rail, river, road and air, as well as being the nerve centre of telecommunications in the country. Ease of communications has made it possible for the triple capital to provide a wide range of administrative, educational, medical, commercial and industrial functions at both the regional and national levels. It is with the service areas of these functions that the remaining part of this paper is concerned.

Hinterland Study

Practically all towns, large or small, cater for a population which is often larger than their own. Population distribution to the east and west of Khartoum conurbation is very slight because of arid conditions. The absence of cities of any magnitude within a radius of 180 km. from the Three Towns is probably due to the large size of the conurbation (the 1973 Census puts the population of the three cities at 800,000), together with sparse population and poor agricultural potentialities. In a way, the low purchasing power of the rural population has retarded the development of urban centres of any size within a considerable distance from the Khartoum complex. The nearest major cities of importance are Wad Medani at 180 km. to the south along the Blue Nile, Ed-Dueim at 190 km. to the south along the White Nile, and Shendi at 160 km. to the north on the main river (Fig. 5). Kassala to the east and El Obeid to the west are located at approximately 430 km. and 415 km. from the Capital respectively.

In their endeavour to investigate the degree of inter-relationship that exists between town and region, geographers and others have used certain indices to delimit the service areas of cities. Since it is clear that urban services and functions cannot be discharged with the same degree of intensity from the central city, the result will be a series of hinterlands around the city rather than a single unified region (SMAILES, 1953). As the cities are not equally accessible from all points at a certain distance, hinterland boundaries are expected to be irregular in shape rather than follow a concentric pattern. Indices such as medical and educational facilities, wholesale and retail trade, banking and insurance facilities, bus services and newspaper circulation have been employed by European and American geographers to delimit the sphere of influence of cities (SMAILES, 1944, 1946, 1947; DICKINSON, 1930, 1964; GREEN, 1950).

However, as some of the above services are not extended beyond the limits of the Three Towns themselves, it will not be possible to use such indices in the delimitation of service areas. As indicated earlier, the circulation of newspapers from the Khartoum Conurbation is limited by both inadequate transport and a high rate of illiteracy. In the same way, banking and insurance facilities are provided to a small section of the urban population and as such cannot be used as an index. Similarly, an analysis of bus service is not expected to promote any definite hinterland boundaries either, as these services are not yet fully developed. Nevertheless, medical and commercial functions seem to provide suitable indices for studying the hinterland of the Three Towns.

A close examination of fieldwork material collected from over one hundred villages in the hinterland of the urban complex has revealed that there are two

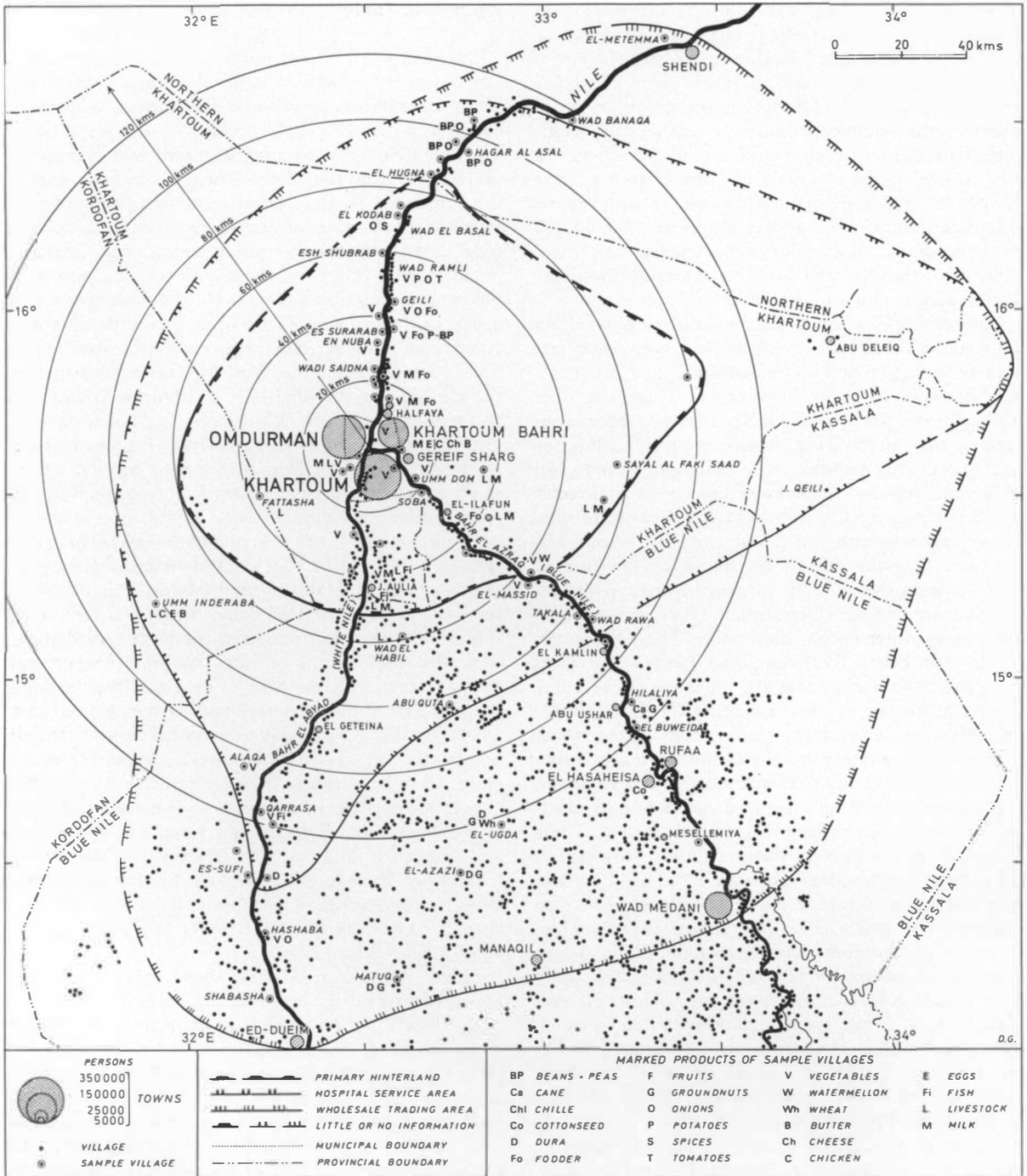


Fig. 5: Khartoum conurbation – sphere of influence

main hinterlands (EL-BUSHRA, 1970), namely, a primary hinterland and a secondary hinterland (Fig. 5) each of which to be subdivided into an inner and an outer zone, viz:

Primary Hinterland: a) Inner Zone
b) Outer Zone

Secondary Hinterland: a) Inner Zone
b) Outer Zone

As used in this paper, the term hinterland or sphere of influence covers a wide area which has social and commercial ties with the Three Towns. These bonds are either intimate as in the case of the primary hin-

terland, or loose as in the case of the secondary hinterland.

Primary Hinterland

This is the area which has the closest and strongest ties with the Three Towns. The primary hinterland extends for 50 km. to the south, 60 km. to the west, 85 km. to the north, and 100 km. to the east. It almost covers the whole of Khartoum Province having a total population of over one million (1973). About 75% of the population of this province live in the Three Towns conurbation.

I n n e r Z o n e: The inner part of this primary hinterland is completely dominated by the Three Towns. Villagers in this inner zone do not only depend on the urban area for the provision of essential services, but also for work. This is the commuter's zone which witnesses the daily comings and goings of people. Although the commuter's zone is not as well-defined as that of Western cities, most of the commuters come from an area within a radius of 40 km. from the conurbation. In addition to the daily movement of workers, there is a considerable daily movement of school children into the urban area. Villagers in this inner part of the primary hinterland supply the Three Towns with some of their daily needs of vegetables, fruits, poultry, dairy products and fish (ABDALLA and SIMPSON, 1965).

O u t e r Z o n e: The outer part of the primary hinterland is still completely oriented towards the urban complex not only for the provision of essential services, but also for the marketing of agricultural products. As the outer zone of the primary hinterland lies beyond the 40 km. radius, very few people are working in the Three Towns. Although primary schooling is provided in this outer zone, secondary education has to be fetched in the urban area. Similarly, except for a small hospital of 40 beds at Abu Deleiq about 150 km. east of Khartoum North, and the dispensaries and dressing stations provided at village level, all medical services are provided in the Three Towns. The hospital service area of Khartoum conurbation extends for 200 km. to the east, 85 km. to the south along the Blue Nile and the northern Gezira (Gezira: land between the two Niles), 140 km. to the south along the White Nile, 80 km. to the west, and 120 km. to the north (Fig. 5). This is a much wider area than that of the primary hinterland, indicating poor medical facilities over an extensive territory. The hospitals of the Three Towns also provide specialized services on a nationwide basis. Usually a visit to hospital for personal treatment, or to see a patient is combined with shopping and entertainment.

The outer part of the primary hinterland supplies the Three Towns with substantial amounts of food stuffs. Highly perishable materials come from an area within 60 km. radius from the three cities, while less

perishable stuffs such as beans, peas, potatoes and fish come from areas located at over 100 km. from the centre. Although vegetables, fruits, milk, eggs, chickens, cheese and fish come from within the primary hinterland and even beyond, there is a tendency for specialization by region. Thus the Nile valley north of Khartoum specializes in the production of vegetables which come from such important centres as Geili, Wad Ramli, Wad el Basal on the east bank of the Nile, and Wadi Saidna, Es Surarab and El Kodab on the West bank (Fig. 5). A wide variety of vegetables is also produced along the Blue Nile to the south in places such as Gereif Sharg, El-Ilafun and El-Masid. This part of the hinterland is also important in the production of poultry and dairy. The area along the White Nile is important in the production of vegetables and fish. Places such as Jebel Aulia (50 km.) and Qarrasa (140 km.) to the south along the White Nile are important fishing centres. As the White Nile is a broad, shallow and slow river, it offers ideal conditions for fishing operations (Fig. 5). The areas to the east (150 km.) and west (100 km.) specialize in the production of milk, butter, cheese, eggs, chickens and livestock. These parts of the hinterland are dominated by nomadic groups who specialize in the production of such items.

To sum up, almost the entire supply of daily vegetables, fruits, milk, eggs, chickens and fish which enters the central market is brought from the primary hinterland. In turn the Three Towns provide retail and wholesale facilities for all the villages within the primary hinterland. The above discussion shows that the Khartoum conurbation depends largely on the surrounding countryside for the daily supplies of fresh food. The area beyond the primary hinterland which covers the entire country is referred to as the secondary hinterland. This part of the hinterland supplies the Three Towns with food, as well as raw materials and labour for commercial and industrial development.

Secondary Hinterland

The region which lies beyond the primary hinterland has generally weaker social and economic relations with the conurbation. Most of the essential services are satisfied locally and a visit to the Three Towns becomes a rarity.

I n n e r Z o n e: The inner part of the secondary hinterland extends southwards along the line from Wad Medani (180 km.) to Manaqil (170 km.) and Ed-Dueim (190 km.) coinciding with the wholesale trading area of the Three Towns. The boundary to the east lies beyond Abu Deleiq (150 km.) to coincide with the provincial boundary, that to the north passes through Shendi (160 km.), and that to the west passes through Umm Inderaba located at 80 km. radius from the conurbation. This is an extensive area incorporating in addition to the above large towns smaller ones

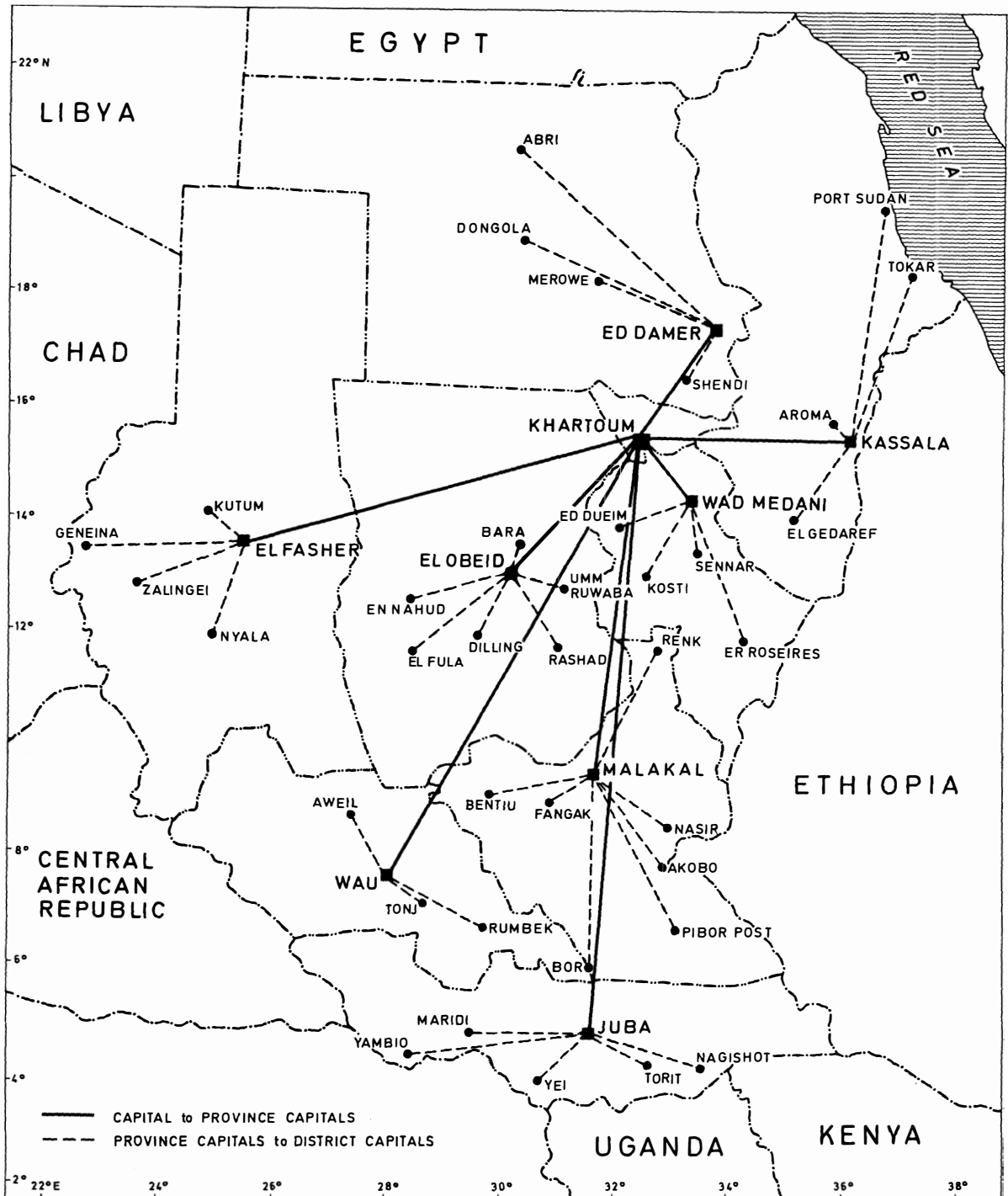


Fig. 6: Administrative position of Khartoum

such as El Kamlin, Rufa'a, El-Hasaheisa and Meselle-miya on the Blue Nile, El Geteina on the White Nile and El-Metemma on the west bank of the main Nile opposite Shendi (Fig. 5). The total population living within this inner part of the secondary hinterland is

estimated at 3 million most of whom are concentrated in rural villages. Taking the primary hinterland and the inner part of the secondary hinterland, no less than 3.5 million inhabitants are either directly or indirectly served by the Three Towns. In this case the

Khartoum conurbation will be serving a population more than four times its size. Medical, educational and commercial facilities are provided by smaller towns within this part of the secondary hinterland for their surrounding regions indicating that connections with the Three Towns are less frequent. However, although villagers within this inner part of the secondary hinterland are more dependent on local markets, they are still oriented towards the Three Towns in case of specialized medical and shopping facilities. Poor medical facilities throughout this region force people to make the journey to the triple Capital, even though the means of transport are inadequate. Beyond this inner zone of the secondary hinterland is another zone in which only commercial ties are maintained with the Three Towns.

O u t e r Z o n e : The outer zone that lies beyond the inner part of hospital and wholesale trading area encompasses the entire country. As the national capital the Khartoum conurbation provides centralized legal, administrative, defence and commercial functions for the entire nation. The centralization of governmental machinery in the Three Towns has led to the concentration of commercial and industrial enterprise (Fig. 6). This centralization of facilities explains the continuous interaction between Khartoum and the rest of the country. Highly specialized medical services and higher education are also centralized in the capital. Extreme centralization of services and functions in the national capital has serious social and economic implications in a vast country like the Sudan (Sudan has a total area of 2.5 million km²).

From the commercial and industrial point of view both the primary and secondary hinterlands are of vital importance to the urban complex. The various parts of the country provide the Three Towns with food, together with raw materials and labour for their industries. Thus, the area to the north of Shendi along the main Nile provides dates, pulses, wheat and citrus fruits; the Gezira to the south supplies cotton, cotton-seed, groundnuts, wheat and dura (sorghum); the western Sudan is an important source of livestock, butter, cheese, sesame, dukhn (millet), and gum arabic; the eastern part of the country provides dura, sesame, gum arabic, fruits and livestock; and the southern Sudan supplies timber and fruits. Dura, the staple food, is supplied largely by the Gedaref District of eastern Sudan, and wheat the second cereal is supplied by the Northern Province and the Gezira. Cheese and butter come from Ed-Dueim on the White Nile, and El Obeid and Babanousa in western Sudan. Cotton and cotton-seed from the Gezira and Nuba Mts., and sesame and groundnuts from eastern and western Sudan provide the raw materials for the textile and oil mills in the Khartoum area. Sugar, which enters into the manufacture of a wide range of food products, is brought from Geneid and Khashm el Girba factories. Most of the power used in the Three Towns is genera-

ted at Sennar and Er Roseires dams on the Blue Nile southwards at 280 km. and 530 km. respectively.

Conclusion

The previous discussion has demonstrated that the Khartoum conurbation as a regional and national centre has developed contacts with the various parts of the country through a well-organized network of communications. Because of the relative ease of communications, the urban complex is now able to command an extensive area within the country. Furthermore, both the telephone and radio are bringing the Three Towns into even more contact with the rest of the nation. The nodality of the triple Capital has made it possible to extend the services of education, health, commerce and administration at the regional and national levels. The attempt which has been made in this paper to delimit the hinterland of the Three Towns has revealed that there are two main hinterlands around the central cities, namely, a primary and a secondary hinterland. The former, which has intimate social and economic ties with the urban area, has a total population of about half a million, while the inner part of the secondary hinterland, where such bonds are rather loose, has about 3 million inhabitants.

The study also shows that some of the indices used by geographers to delimit hinterlands of European and American cities have not been applicable in case of Khartoum complex simply because some of the urban services are not extended beyond the limits of the Three Towns themselves. Moreover, as some of the services and functions are provided at the national level, the delimitation of some service areas becomes rather invalid. Nevertheless, the existing interrelationships between the Three Towns and their immediate region, on the one hand, and that with the rest of the country, on the other, are real socially and economically.

It has also been indicated that this town and country symbiosis is dynamic in nature depending on technological advances, particularly that of communications. Improvements in the means of communications have far-reaching cultural and economic consequences in the urban area and its surroundings. The hinterland of the Three Towns is expected to expand to the south and north with perhaps little change to the east and west. At any rate, the expansion southwards into the Gezira will be more vigorous than in any other direction. The Gezira is not only the richest agricultural region in the country, it is also the area which has the easiest and quickest connections with the triple capital. However, the expansion of the hinterland to the east and west of the Three Towns will be seriously limited by aridity and sparse population. As the means of communications improve northwards the hinterland will be extended in this direction.

Geographers and others who are concerned with regional and economic planning have commended the division of countries into hinterlands rather than in administrative units. G. TAYLOR (1951), E. W. GILBERT (1951, 1948, 1939), R. E. DICKINSON (1964, 1930), and A. E. SMAILES (1944, 1946, 1947, 1953) among others have advocated the use of hinterlands which have more realistic social and economic connections with the central cities than administrative regions. Administrative divisions are considered by some as a legacy of the past and as such they no longer conform with the complex social and economic realities of modern society. However, it must be admitted that although from the point of view of social and economic considerations administrative units are in many ways superficial, the delimitation of urban hinterlands is exceedingly difficult, particularly in developing countries, where town and country relations are not yet fully developed. In other words, although the division of countries into hinterlands is more meaningful than administrative divisions, it is doubtful whether the former will be as practicable as the latter.

References

ABDALLA, A. A. and SIMPSON, M. C.: The Production and Marketing of Vegetables in Khartoum Province, Khartoum 1965.

- DICKINSON, R. E.: City Region and Regionalism, London 1964.
 - : "The Regional Functions and Zones of Influence of Leeds and Bradford", Geography vol. 15, 1930.
 DOXIADIS, C. A.: Khartoum: A Long Term Programme and a Master Plan for the Development of the Town, Athens 1959.
 EL-BUSHRA, E.-s.: The Khartoum Conurbation, an Economic and Social Analysis, unpublished Ph. D. Thesis, Univ. of London 1970.
 GILBERT, E. W.: "Geography and Regionalism", in G. Taylor (ed.), Geography in the 20th. Century, London 1951.
 - : "The Boundaries of Local Government Arcas", Geographical Journal, vol. CXI, 1948.
 - : "Practical Regionalism in England and Wales", Geographical Journal, vol. XCIV, 1939.
 GREEN, F. H. W.: "Urban Hinterland in England and Wales, An Analysis of Bus Services", Geographical Journal, vol. CXVI, 1950.
 HILL, R.: Sudan Transport, London 1965.
 SMAILES, A. E.: The Geography of Towns, London 1953.
 - : "The Urban Hierarchy in England and Wales", Geography, vol. 29, 1944.
 - : "The Urban Mesh in England and Wales", Institute of British Geographers, Transactions and Papers, vol. II, 1946.
 - : "The Analysis and Delimitation of Urban Fields", Geography, vol. 32, part 4, N. 158, 1947.
 TAYLOR, E. G. R., COLE, G. D. H. and GILBERT, E. W.: "Discussion on the Geographical Aspects of Planning", Geographical Journal, vol. XCIX, 1942.

BERICHTE UND KLEINE MITTEILUNGEN

DER ERZBERGBAU IN NORDMANITOBA / KANADA - ENTWICKLUNG UND GEGENWÄRTIGER STAND -

Mit 3 Abbildungen und 3 Tabellen

BERNHARD METZ und JOHN R. ROGGE

Summary: Ore mining in northern Manitoba, Canada - development and present status.

This paper reviews the development of the mining industry in northern Manitoba. In particular, it focuses upon the dramatic expansion over the past twenty years, during which time the industry has grown from virtual insignificance to become one of the major metallic mineral producing areas in Canada. The nickel industry in the Thompson region is the most important activity, but a number of other areas - at Flin Flon, Snow Lake, Lynn Lake and Leaf Rapids - are also important for their copper and zinc production. A consequence of the industry's growth has been the concomitant expansion of settlement into the hitherto non-ecumene of the subarctic. Moreover, the mining industry has diversified the Province's economic base and thereby reduced its traditional dependence upon agriculture-related activities.

In weiten Teilen Kanadas vermissen wir ein Zusammentreffen zwischen besiedelten Gebieten auf der einen und Gebieten mit wirtschaftlich nutzbaren Ressourcen auf der anderen Seite. Dies erlaubt uns, eindeutig zwischen ‚habitation ecumene‘ und ‚exploitation ecumene‘ zu unterscheiden*).

Die vergangenen 20 Jahre brachten eine nie zuvor erlebte Ausweitung der ‚exploitation ecumene‘ Manitobas. Jenseits der Nordgrenze der zusammenhängenden Besiedlung erstreckt sich die Wildnis der borealen Wälder und des Kanadischen Schildes. Dies sind Ge-

*) Diese Unterscheidung wurde vorgeschlagen von L. E. HAMELIN in: Typologie de l'écumène Canadien. - Proceedings and Transactions of the Royal Society of Canada, Sect. I, Vol. 4, 1966, 41-54.