

Chapter 1 : Economic geography - Wikipedia

The Spatial Factor in African History. Edited by Alien M. Howard and Richard M. Shain. African Social Studies Series. Leiden and Boston: Brill, Pp. xii, \$80/euro59 paper. Howard and Shain's collection illustrates the range of ways in which spatial analysis can contribute to our.

Although many studies have investigated the probability of Ebola virus disease EVD outbreaks while other studies have simulated the size and speed of EVD outbreaks, few have investigated the environmental and population-level predictors of Ebola transmission once an outbreak is underway. Identifying strong predictors of transmission could help guide and target limited public health resources during an EVD outbreak. We examined several environmental and population-level demographic predictors of EVD risk from the West African epidemic. We obtained district-level estimates from the World Health Organization EVD case data, demographic indicators obtained from the Demographic and Health surveys, and satellite-derived temperature, rainfall, and land cover estimates. A Bayesian hierarchical Poisson model was used to estimate EVD risk and to evaluate the spatial variability explained by the selected predictors. We found that districts had greater risk of EVD with increasing proportion of households not possessing a radio RR 2. The finding of radio ownership and reduced EVD transmission risk suggests that the use of radio messaging for control and prevention purposes may have been crucial in reducing the EVD transmission risk in certain districts, although this association requires further study. Future research should examine the etiologic relationships between the identified risk factors and human-to-human transmission of EVD with a focus on factors related to population mobility and healthcare accessibility, which are critical features of epidemic propagation and control. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. Fruit bats are believed to be a key reservoir of Ebolavirus, which can also cause illness and death in non-human primates such as in apes and monkeys. These symptoms are followed by vomiting, diarrhea, rash, impaired liver and kidney functions, and can also result in internal and external bleeding. The identified predictors have included extensive EVD-related deaths in primates; 13 deforestation and human forest activities; 14 population density; 15 elevated levels of precipitation, 16 humidity, 17 and elevation; 12 the transition from rainy to dry season; 14 , 18 moderate-to-high temperatures 16 and lower temperatures in equatorial Africa; 12 , 17 as well as increased vegetation density 12 and evergreen broadleaf forest coverage. Previous work has investigated the probability of Ebola outbreaks, and mathematical modelling studies have estimated the size, speed, and spatio-temporal patterns of EVD using simulated data. There have been limited studies that have assessed the spatial distribution of EVD human cases using empirical data; Stanturf et al. In this study, we sought to identify environmental and population-level demographic spatial predictors of human EVD risk from the recent West African epidemic. Guinea, Liberia, and Sierra Leone. Guinea has an estimated population of 11., 25 and covers an area of , km² including terrain consisting of coastal mangrove plains, forested highlands, and savannah plains. Its terrain ranges from sandy coastal plains to rolling hills and rolling plateau, with low mountains in the northeast. Sierra Leone experiences a tropical climate with a rainy season from May to October and a dry season from November to April. We then explored correlations between various environmental and socio-demographic variables, as a first step in identifying predictors to include in our final model. Data for potential predictors were obtained from multiple sources including satellite sensor-derived environmental data and national Demographic and Health Surveys DHS. Eight of the land cover classifications were considered in the analysis as the remaining nine categories had negligible presence in Guinea, Liberia, and Sierra Leone. Density of waterways and roadways were estimated km per km² , as was the average elevation and land area from shapefiles obtained from DIVA-GIS. Shapefiles from the WorldPop project were acquired, which provided projected population estimates. All estimates were obtained at the district level and Universal Transverse Mercator zone 28 projection was used. National DHS from Guinea , Liberia , and Sierra Leone were used for subnational estimates on household education, wealth, occupation, household structure, and possessions and amenities. For Liberia and Sierra Leone, these estimates were obtained for the county and district levels respectively. Covariate selection Linearity between covariates and

the outcome was first assessed and for ease of interpretation and to avoid modelling complex non-linear terms, all continuous variables were reclassified into tercile intervals. We regressed the cumulative total of EVD cases outcome on the selected covariates using a Poisson model with the total population per district as an offset, given the population differences between the districts. We used the `glmulti` R package to exhaustively explore the covariate subset and selected the covariate subset whose model had the best AIC. The model is as follows: The covariates from x_1 to x_{12} are defined in Table 1. T2 and T3 refer to the second and third terciles. Non-informative priors were used for the variance and the regression coefficients, and sensitivity analyses suggested that the priors did not significantly affect the marginal posteriors of the parameters of interest.

Chapter 2 : The Spatial Factor in African History

THE SPATIAL FACTOR IN AFRICAN HISTORY Download *The Spatial Factor In African History* ebook PDF or Read Online books in PDF, EPUB, and Mobi Format. Click Download or Read Online button to *THE SPATIAL FACTOR IN AFRICAN HISTORY* book pdf for free now.

Share Urbanization is growing in both developed and developing countries. In the developing world, Africa has experienced the highest urban growth during the last two decades at 3. Yet, urbanization in Africa has failed to bring about inclusive growth which, in turn, has resulted in proliferation of slums, urban poverty and rising inequality. Inequality in African cities remains the second highest in the world with an average Gini coefficient of about 0. Rural-urban migration and natural population growth rates in cities are the major causes of the increasing rate of urban growth and slum proliferation in Africa. However, there are large variations in the patterns of urbanization across African regions. North Africa has a higher proportion of urban population. The relatively fewer slums in North African countries is mainly attributed to better urban development strategies, including investment in infrastructure and in upgrading urban settlements. In contrast, SSA has the lowest proportion of urban population. Most SSA cities are characterized by insufficient basic infrastructure, particularly in low-income areas. Since incomes from the informal sector are by their very nature low and intermittent, most migrants naturally seek for shelters or become tenants of slum landlords. As a consequence, many African cities have to deal not only with slum proliferation but also with increasing insecurity and crime. Weak institutions have contributed to poor urban enforcement, resulting in dysfunctional land and housing markets, which in turn has caused mushrooming of informal settlements. Furthermore, African governments have neglected the key drivers of productivity which include small and medium-size enterprises, human resource and skills development, and technological innovation. These factors are essential in advancing predominantly informal, survivalist and basic trading activities to higher value-added work. The expansion of cities is generally at the expense of destruction of forests and other natural environment or ecosystems, and increasing pollution especially air pollution with the related diseases. Policy Responses to the Expansion of Urbanization in Africa In order to address the challenges of urbanization facing many African cities, some key reforms should be pursued by governments. These include i upgrading informal settlements through the provision of integrated infrastructures and services that target the marginalized groups, including the poor, youth, women and elderly people. In addition, governments should act proactively to ensure orderly urban development by defining and implementing clear urban development strategies; ii mobilizing urban financing from local and foreign investors. These reforms should be more inclusive to ensure that all categories of citizens, regardless of their age, race, gender, ethnicity, or socio-economic conditions, have equal access to adequate housing, basic infrastructure and services and equal job opportunities.

Chapter 3 : Population Distribution, Settlement Patterns and Accessibility across Africa in

In addition, a lengthy essay re-interprets tropical African history, , using spatial theory. Contributors look at how people have constructed mental maps, used discourse to organize territories, and perceived social landscapes.

Geologic history General considerations The African continent essentially consists of five ancient Precambrian cratonsâ€” Kaapvaal , Zimbabwe , Tanzania, Congo, and West Africanâ€”that were formed between about 3. All of those rocks have been extensively folded and metamorphosed that is, they have been modified in composition and structure by heat and pressure. They consist of gray, banded gneisses, various granitoids, and rather well-preserved volcanic rocks that show evidence of submarine extrusion i. The rock type komatiite is particularly diagnostic of those volcanic sequences and is almost exclusively restricted to the Archean Eon. The cratons were tectonically stabilized by voluminous granite intrusions toward the end of the Archean and were then covered by clastic sediments, some of which contain economically important gold and uranium deposits e. The Proterozoic Eon 2. The oldest mobile belts are found in Archean rocks, such as the Limpopo belt separating the Kaapvaal from the Zimbabwe craton. Younger belts were formed during a continentwide thermotectonic event known as the Eburnian 2. Still younger belts of the Kibaran thermotectonic event 1. The end of the Precambrian was marked by a major event of mobile-belt formation known as the Pan-African episode about to million years ago , which generated long fold belts, such as the Mozambique belt along the east coast of Africa, the Damara and Katanga belts extending from Namibia into the Democratic Republic of the Congo and Zambia , the West Congo belt between Angola and Gabon , the Dahomey-Ahaggar belt between Ghana and Algeria , and the Mauritanide belt from Senegal to Morocco. A unique late Precambrian evolution is recorded in the so-called Arabian-Nubian Shield of northeastern Africa and Arabia. There, large volumes of volcanic and granitoid rocks were generated in an island-arc, marginal-basin settingâ€”an environment similar to that of the present southwestern Pacific Ocean. Rocks were accreted onto the ancient African continent, the margin of which was then near the present Nile River , by subduction processes identical to those observed today. Subduction involves the descent of the edge of one lithospheric plate beneath that of another where two such plates collide. The interiors of the ancient cratons were not affected by the above tectonic events, and intracratonic sedimentary and volcanic sequences accumulated in large basins. The most important of those are the Transvaal basin on the Kaapvaal craton that contains economically important iron ore deposits; the Congo basin; and the West African basin, with its thick late Proterozoic sediments including a prominent tillite horizon that marks a major glaciation event at the end of the Precambrian. The best-preserved assemblages occur in the Kaapvaal and Zimbabwe cratons and contain large deposits of gold and sulfide minerals. The volcanic suites are dominated by basaltic and komatiitic lavas, often interlayered with metasediments and generally referred to as greenstone belts. Those structures are often found together with layered gneisses, or they are intruded by granitoid plutons. Several generations of greenstones have been recognized. The oldest formed about 3. Some of the oldest traces of life are preserved as unicellular algae in Precambrian cherts of the Barberton greenstone belt in the Transvaal region of South Africa. One of the most spectacular features marking the end of the Archean is the intrusion of the Great Dyke in Zimbabwe , a large, layered body of mafic-ultramafic rocks with substantial deposits of chromium, asbestos, and nickel. It is still not clear whether Archean evolution was characterized by the same plate tectonic processes that are seen today, and there are suggestions that the greenstone belts are remnants of ancient oceanic crust. Cratonic essentially undeformed sediments appear in the stratigraphic record for the first time in the late Archean and are best developed in the Kaapvaal craton of Southern Africa. The early Proterozoic about 2. Of particular interest are extensive stromatolite-bearing limestones and economically important iron formations in the Transvaal sequence of South Africa that provide evidence for an oxygen-rich atmosphere by about 2. About 2 billion years ago the Bushveld Complex â€”which is one of the largest differentiated igneous bodies on Earth , containing major deposits of platinum , chromium , and vanadium â€”was emplaced in the northern Kaapvaal craton. The middle part of the early Proterozoic was dominated by powerful orogenic mountain-building processes that gave rise to fold belts in which sedimentary and volcanic

rocks originally deposited in deep basins along the continental margins were severely deformed, metamorphosed, intruded by granitoid plutons, and finally uplifted into mountain ranges, probably as a result of continental collision. That Eburnian event was particularly active in western Africa, where it deformed the Birimian assemblages; but it was also active in eastern Africa, where it generated the Ubendian belt in southern Tanzania, and in southwestern Africa, where it formed major rock units in Angola and northern Namibia. By the end of the early Proterozoic, the Archean crustal blocks had grown into cratons of considerable size. The record of the middle Proterozoic about 1. Undeformed or only mildly folded successions are found in Southern Africa Waterberg and Matsap sequences, in northern Zambia, and in the Democratic Republic of the Congo. Elsewhere, sedimentary and volcanic sequences were deposited in elongate basins that were later subjected to intense deformation and metamorphism during the Kibaran event. That important thermotectonic episode gave rise to the Kibaran-Burundian fold belt in east-central Africa, the Ruwenzori belt in Uganda, and the Namaqua-Natal belt in South Africa and Namibia. The late Proterozoic about 1 billion to million years ago is again characterized by platform deposits in stable areas, such as the West African craton Taoudeni and Tindouf basins, the Congo craton, the Kalahari craton Nama basin of Namibia, and the Tanzania craton Bukoban beds. Tectonic and magmatic activity was concentrated in mobile belts surrounding the stable areas and took place throughout the late Proterozoic, during the so-called Pan-African thermotectonic event. Long, linear belts—such as the Damara-Katanga of central and southwestern Africa, the Mozambique belt of eastern Africa, and the Dahomey-Ahaggar belt of western Africa—formed during that time, and some of those belts contain diagnostic rock assemblages that indicate that they resulted from continental collisions. Many late Precambrian sequences of Africa contain one or two beds of tillites sedimentary rocks that are composed of lithified clay and rock sediments produced by the action of ice, which are thought to have resulted from an extensive glaciation that covered much of Africa at that time. In the Arabian Eastern Desert of Egypt and in the Red Sea Hills of Sudan, a predominance of volcanic rocks and granitoids, together with frequent remnants of ancient oceanic crust, document an evolution similar to what is now occurring in the island-arc systems of the southwestern Pacific. Those rocks clearly demonstrate that plate tectonic processes operated in the late Precambrian. The continent of Africa may be said to have taken shape during the Paleozoic. A glacial period during the Ordovician is evidenced by widespread deposition tillites, which may be seen in southern Morocco, throughout western Africa, and in subequatorial Africa as far south as Namibia. That tillite sequence marks the transition from the end of the Precambrian to the beginning of the Cambrian Period. In Egypt and in the Arabian Peninsula their presence has been revealed by drilling. Elsewhere they remain unknown. During the Ordovician Period about to million years ago, fossiliferous marine sandstone completely covered northern and western Africa, including the Sahara. The Table Mountain sandstone of South Africa constitutes its only other trace. That period is, in addition, remarkable for broad, large-scale deformation of the African crust, which raised the continental table of the central and western Sahara by approximately 5, feet 1, metres. Each emergence resulted in the creation of valleys that became flooded when the continent subsided. Toward the end of the period, the Sahara became glaciated, and tillites and sandstones filled the valleys. A complete change of sedimentation characterized the Silurian Period about to million years ago, which is indicated by the deposits of graptolitic shales those containing small fossil colonies of extinct marine animals of uncertain zoological affinity in the Arabian Peninsula and in northwestern Africa. Marine fossils of the Devonian Period about to million years ago are found in North Africa and in the Sahara. Fossilized plants that include Archaeosigillaria ancient club mosses may be traced in formations of the earlier Devonian Period in the Sahara and in South Africa Witteberg Series. The Carboniferous Period about to million years ago was marked by the onset of several major tectonic events. Evidence of marine life that existed in the earlier part of the period comes from fossils found in North Africa, the central and western Sahara, and Egypt. During the middle and later parts of the Carboniferous, the Hercynian mountain-building episodes occurred as a result of collision between the North American and African plates. The Mauritanide mountain chain was compressed and folded at that time along the western margin of the West African craton from Morocco to Senegal. Elsewhere, major uplift or subsidence occurred, continuing until the end of the Triassic Period i. Those structures were synformal folded with the strata

dipping inward toward a central axis in the Tindouf and Taoudeni basins of western Algeria, Mauritania, and Mali and antiformal forming a mountainous spine or dome at Reguibat in eastern Western Sahara. The late Carboniferous Period is represented throughout the Sahara by layers of fossilized plants and sometimes "as in Morocco and Algeria" by seams of coal. Different phenomena may be observed, however, in the region of subequatorial Africa, including the Dwyka tillite, which covers part of South Africa, Namibia, Madagascar, an extensive portion of the Congo Basin, and Gabon. At several places in South Africa, the Dwyka strata are covered by thin marine layers that serve to demarcate the transition from the Carboniferous to the Permian Period and that form the beginning of the great Karoo System. Marine fossils of the Permian Period about 250 million years ago are visible in southern Tunisia, in Egypt, in the Arabian Peninsula, on the coasts of Tanzania, and in the Mozambique Channel. Elsewhere, traces of the Permian are of continental rather than marine origin and are included in the Karoo System in South Africa. There, the lower Permian strata are known as the Ecca Series and are divided into three groups: The upper Permian is represented by the lower part of the Beaufort Series, which continued forming into the early Triassic Period. The Beaufort Series is almost 10,000 feet, 3,000 metres thick and is famous for its amphibian and reptile fossils; a similar series is also found in southern Russia. The absence of primary marine formations throughout Southern Africa should be emphasized. It is not yet known whether that absence is due to a hiatus in deposition or to erosion. The Mesozoic Era about 250 million years ago is divided into three periods—the Triassic, Jurassic, and Cretaceous—and is remarkable for the transgression of ancient seas and for the emergence of massive land formations containing interesting fossil remains. Marine formations During the Triassic Period about 250 million years ago, ancient seas left deposits of marine formations in North Africa, the southern Sahara, Egypt, Arabia, and parts of Tanzania and northern Madagascar. In the middle of the Jurassic a great transgression of the Indian Ocean extended over Somalia and much of Ethiopia. That event was followed by a series of marine transgressions in the Cretaceous Period about 100 million years ago, including those along the coasts of equatorial Africa when Gondwana broke up and the present Atlantic and Indian oceans took shape; during one transgression a shallow sea covered much of the northern and central Sahara and Egypt as far south as Sudan; and a later one again covered the same areas, as well as western Arabia and the west coast of Madagascar. Continental formations In Africa north of the Equator and in Arabia, Mesozoic continental formations covered large areas. During the Triassic the Saharan Zanzaitine Series, containing dinosaur and other reptilian fossil remains, was deposited. The Saharan Taouratine Series, containing fossils of vegetation and of great reptiles, was laid down during the Jurassic. In the upper Karoo System of subequatorial Africa, formed during the early Triassic Period, the Beaufort Series contains fossils of fish, amphibians, and reptiles. The final stages of the Triassic and the early Jurassic periods were characterized by the terminal folding of the Cape mountain chain, by subsidence in the Karoo basin, by fracturing, and by widespread upwelling of Karoo basaltic lavas through fissures, creating formations some 4,000 feet, 1,200 metres thick, such as the Drakensberg range along the eastern border of Lesotho and in South Africa. During the Jurassic and the Cretaceous periods, widespread sediments were deposited that contain fossilized plants, dinosaurs, and smaller reptiles. Certain unique eruptions occurred during the Cretaceous that led to the creation of kimberlite pipes—near-cylindrical rock bodies, usually approximately vertical and derived from melting at great depth in the upper mantle in Southern and Central Africa; some of those, particularly in South Africa, Botswana, Namibia, Angola, and the Democratic Republic of the Congo, contain large quantities of diamonds and are the main source of that precious mineral. The Cenozoic Era The Cenozoic, the most recent major interval of geologic time is divided into the Paleogene and Neogene about 66 to 2 million years ago. During that mountain-building episode, the Atlas Mountains of northwestern Africa were folded and uplifted. Notable too are the formation of the Red Sea rift valley and the volcanism and rifting that took place during the later stages of the period. With the exception of the Sahara, nummulites of the Eocene Epoch about 56 to 34 million years ago are found in the same places, as well as on the African coasts of the Indian Ocean. There also are lepidocyclines foraminifera of the Oligocene Epoch about 34 to 23 million years ago and of the Miocene Epoch about 23 to 5 million years ago. Continental formations Several levels may sometimes be distinguished in the continental formations of the Cenozoic Era. They include lower Eocene levels containing *Pseudoceratodes* a genus of gastropod and *Dyrosaurus* a type of reptile, as well as upper Eocene and

Oligocene levels containing silicified wood and fossilized fish, turtles, crocodiles, snakes, and mammals. Sediments of the lower Miocene, which are found on the banks of Lakes Rudolf and Victoria in East Africa, contain mastodon a large elephant-like mammal and Proconsul africanus a large ape. Central Asian hipparions three-toed ancestors of the horse, which simultaneously entered Africa and Europe during the late Miocene Epoch about 11 to 5. Rudolf, LakeLake Rudolf, northern Kenya. In the Miocene, North African flysch thick and extensive deposits composed largely of sandstone formed layers that, from the Rif mountain range of Morocco to northern Tunisia, were pushed from the north toward the south. The High Plains area, farther south, which as a whole was only mildly deformed, was bounded on the south by the northern Atlas Mountains, which intervened between it and the Saharan Atlas. Formation of the Red Sea Tectonic movements in the region of the Arabian-Nubian Shield that took place at the end of the Oligocene and the beginning of the Miocene Epoch almost separated Arabia from Africa. A trough fault-bounded depression developed because of divergence in the crust between northeastern Africa and western Arabia, and the Mediterranean Sea swept into the resulting rift valley, forming a gulf that extended to Yemen. The gulf was prevented from joining the Indian Ocean only by an isthmus that stretched from Djibouti in the west to Aden Yemen in the east. At the end of the Miocene the Isthmus of Suez was formed, and the gulf became a saline lake at the bottom of which thick evaporites sediments formed as a result of evaporation were laid down. The isthmus permitted Asian animal life to pass into Africa during part of the Pliocene Epoch from about 5.

Chapter 4 : Allen M. Howard (Author of Spatial Factor in African History)

The Spatial Factor in African History: The Relationship of the Social, Material, and Perceptual (African Social Studies)
[Allen Marvin Howard, Richard Matthew Shain] on blog.quintoapp.com *FREE* shipping on qualifying offers.

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Abstract The spatial distribution of populations and settlements across a country and their interconnectivity and accessibility from urban areas are important for delivering healthcare, distributing resources and economic development. However, existing spatially explicit population data across Africa are generally based on outdated, low resolution input demographic data, and provide insufficient detail to quantify rural settlement patterns and, thus, accurately measure population concentration and accessibility. Here we outline approaches to developing a new high resolution population distribution dataset for Africa and analyse rural accessibility to population centers. Contemporary population count data were combined with detailed satellite-derived settlement extents to map population distributions across Africa at a finer spatial resolution than ever before. Substantial heterogeneity in settlement patterns, population concentration and spatial accessibility to major population centres is exhibited across the continent. The analyses highlight large inequities in access, the isolation of many rural populations and the challenges that exist between countries and regions in providing access to services. The datasets presented are freely available as part of the AfriPop project, providing an evidence base for guiding strategic decisions.

Introduction Geography plays a significant role in the development process [1]. Three spatial features influence the economic development of a region: Improving access to people and markets is a key driver for development and plays an important role in poverty reduction. Development among rural populations depends on access to markets for buying and selling goods, to water and fuel, and to various social and economic services such as education, healthcare or banking and credit [2] – [4]. The lack of a reliable transport system forces rural populations to spend a significant amount of time in travelling to meet basic needs and increases the transport costs incurred to access these services [2] – [4]. These factors often mean that isolation is seen as the main contributor to poverty according to the poor people themselves [4]. The proximity of a major settlement provides business for isolated populations, and connectivity with international and regional markets creates economic opportunities. For example, agricultural productivity is highly correlated to the proximity to urban markets in sub-Saharan Africa [5]. Accessing populations efficiently is also of key importance in public health, for delivering equitable and complete healthcare [6], for planning vaccine campaigns or distributing resources. Improving the accessibility of remote populations is an important priority for many of the Millennium Development Goal MDG targets, such as those focussed on eradicating extreme poverty, achieving universal primary education and developing a global partnership for development [4]. The measurement of accessibility of populations and settlements is therefore of importance in measuring progress towards achieving these goals. Where transport infrastructures and access patterns are heterogeneous in space, population distributions and accessibility between populations should be estimated at levels of spatial detail that are similar or finer than the scales of this heterogeneity. Building development strategies and providing policy-relevant guidance therefore requires a detailed and accurate evidence base documenting the spatial distribution of populations, settlements and their interconnectivity. Existing spatial demographic datasets for the low income world, where access remains a substantial barrier to development, are generally based upon outdated and low resolution data, however [7]. Previous studies have developed accessibility indices based on household surveys [4] or more objective GIS-based approaches [8]. However, the lack of sufficiently detailed population and settlement distribution data, especially in Africa, impacts the availability and reliability of spatially-detailed accessibility information. Accurate and spatially detailed population distribution data can make accessibility measures considerably more valuable than can be obtained with aggregated population data. National census population data can be

represented as continuous gridded population distribution datasets through the use of spatial interpolation algorithms. Differing projects and modelling techniques for the spatial reallocation of populations within census units have been developed in an attempt to overcome the difficulties caused by input census data of varying resolutions and provide standard global spatial datasets of population distribution. For a comparison of these datasets, see Tatem et al. While these represent valuable resources for a range of applications that require gridded population data, their lack of spatial detail and information on rural settlements make them unsuitable for thorough analyses of accessibility and connectivity. Moreover, the age and low spatial resolution of much of the input census data, shown to be an important factor in the accuracy of population mapping [14], also represent limitations for contemporary, national-scale analyses. Here we develop and apply population-land cover relationship-based methods [15]–[17] to model settlement and population distributions and densities for the whole Africa at a finer spatial resolution than ever before undertaken. Based on these datasets, we analyse spatial population and settlement patterns, as well as how they are connected by existing transport networks. Given the impact that isolation has on poverty of rural populations and on the economies and health of nations, such spatial demographic datasets are a valuable resource for both research and operational applications in the development of low income countries.

Materials and Methods

Population distribution modelling

The methods used here to model population distribution in Africa are adapted from previous work undertaken for East Africa [15]–[17]. The methods were modified for ease of replication and to facilitate the incorporation of new data. Full details on population distribution modelling methods are presented in Text S1. Tables summarizing country-level input data are available on the AfriPop website: Recent work showed that GlobCover was the global land cover dataset that, combined with detailed settlement extents, produced the most accurate population distribution data in an African context [17]. The GlobCover dataset was modified to accommodate the more detailed settlement extents obtained from satellite imagery and geolocated points. The GlobCover dataset was first resampled to a finer spatial resolution, and the urban class which typically overestimates settlement extent size [15], [17] was removed and the surrounding classes expanded equally to fill the remaining space. Human population census data, official population size estimates and corresponding administrative unit boundaries at the highest level available from the most recent available censuses were acquired for each African country. High resolution census data were available for three countries in Africa: Ghana, Swaziland and Kenya. Kenya data were also available at enumeration area level finer than level 5 for 58 of the 69 Kenyan districts. Also obtained was a population density map of Namibia at 1 km spatial resolution for details on the Namibia density map, see description on www. A table summarizing the spatial resolution, year and source of all data used is available on www. The modelling method distinguishes urban and rural populations in the redistribution of populations. The refined land cover data and fine resolution population data from Ghana, Kenya, Namibia and Swaziland were used to define per land cover class population densities. These land cover specific population densities were then used as weights to redistribute the rural populations within administrative units in the remaining African countries. The population sizes at the national level for each dataset were projected forward to with rural and urban growth rates estimated by the UN Population Division [18].

Accuracy assessment

The accuracies of satellite-derived settlement extents used to refine the land cover dataset were assessed in different ways, as described in Text S2. Accuracy assessment of large-scale population datasets is always challenging due to the use of all geographically-specific data to produce the population dataset, leaving little independent data for testing. However, simple comparison tests with existing gridded population datasets can be undertaken. Here, detailed census data from four African countries were used to assess the accuracy of our modelling method compared to the modelling method used for the construction of the most widely used population datasets: Accuracy assessments were conducted for four countries where data on census counts or official population estimates were reported at a higher administrative unit level than used in the construction of each of the four gridded population datasets: Mali, Namibia, Swaziland and Tanzania. Population modelling was undertaken using census data at an administrative level lower than available at the same administrative level as used in the construction of GPW, GRUMP, LandScan and UNEP and the accuracy of the resultant maps were tested with the higher level data. Comparisons were undertaken through calculation of RMSEs between the per-unit

population counts in the fine resolution datasets and those estimated by the four spatial population datasets. The accuracies of the population datasets were also assessed at the pixel level using the population density map of Namibia at 1 km spatial resolution. To ensure a fair test, the dataset presented here was degraded from m to 1 km resolution. Full details on the accuracy assessment tests are presented in Text S2. Settlement patterns, population distribution and accessibility A variety of measures were calculated based on the population distribution dataset in order to characterize the settlement patterns, the population distribution and accessibility in Africa. This measure emphasizes countries of highly focal population distribution and those where the population is more dispersed. Secondly, a settlement aggregation index was calculated based on the spatial distribution of the detailed settlement extents used as input data for the population distribution modeling. We extracted the Clark and Evans aggregation index R , which is a simple measure of clustering or ordering of a point pattern, using the spatstat package in R [19]. It is the ratio of the observed mean nearest neighbor distance in the pattern to that expected for a Poisson point process of the same intensity [20]. A correction for edge effects was included using the cumulative distribution function method proposed by the spatstat package for non-rectangular windows. The variation of the Clark and Evans settlement aggregation index within countries was also calculated. Thirdly, we calculated the average per-person travel time to the nearest settlement of more than 50, inhabitants. Several studies showed that poverty is more strongly correlated with travel time to large settlements, rather than local markets or large capitals [21] – [24]. We combined the global map of accessibility developed by Nelson [25] with our detailed population distribution dataset to calculate the average travel time of people to the nearest settlement of more than 50, inhabitants. The skewness of the travel time distribution across the population was also calculated, in order to estimate the proportion of population residing in relatively inaccessible areas. All these measures were calculated at the national level and at the first administrative unit level. Two versions were produced: Accuracy assessment results for the modelling methods used in the construction of each of the population datasets are shown in Text S2. While assessments were only undertaken for a few countries, they showed that the modelling method described here produced consistently more accurate datasets than the methods used in the construction of existing largescale gridded population data products, GRUMP, GPW, LandScan and UNEP. In some cases, the LandScan modelling method proved to be equally as accurate, but at the pixel level, LandScan was the least accurate of the population datasets tested for Namibia. The population datasets presented here aim to overcome some of the major sources of uncertainty inherent in previous mapping efforts by focussing on i the detailed and accurate mapping of settlements, where the vast majority of people reside, ii the construction of a database of more recent and detailed African administrative boundary-matched census data than has ever before been assembled Fig.

The Spatial Factor in African History by Richard Matthew Shain, , available at Book Depository with free delivery worldwide.

African Diaspora The African diaspora , together with the Jewish diaspora “the etymological and epistemological source of the term diaspora” enjoys pride of place in the increasingly crowded pantheon of diaspora studies. Studies of African diasporas can be divided into two broad categories. First, there are those that discuss the patterns of dispersal of African peoples around the world and the kinds of diasporic identities these populations developed in their new locations. Distinctions are increasingly drawn between the "historic" and "contemporary" or "new" African diasporas, referring respectively to diasporas formed before and during the twentieth century. Second, some studies are concerned with analyzing the various linkages that the diasporas have maintained with Africa. Here emphasis is on the demographic, cultural, economic, political, ideological, and iconographic flows. The term African diaspora gained currency from the 1960s and 1970s in the English-speaking world, especially the United States. As pointed out by George Shepperson, none of the major intellectual forerunners of African diaspora studies, from Edward Blyden “ , the influential nineteenth-century Caribbean-born Liberian thinker, to W. Du Bois “ , the renowned African-American scholar-activist, used the term African diaspora. The Negritude writers from Francophone Africa and the Caribbean also did not use it. Instead, the term used to define and mobilize African populations globally was Pan-Africanism. One of the challenges in African diaspora studies, then, has been to overcome an American and English language -centered model of identity for African diasporas globally. Defining Diasporas There are several conceptual difficulties in defining the African diaspora—indeed, in defining the term diaspora. Contemporary theorizations of the term diaspora tend to be preoccupied with problematizing the relationship between diaspora and nation and the dualities or multiplicities of diasporic identity or subjectivity; they are inclined to be condemnatory or celebratory of transnational mobility and hybridity. In many cases, the term diaspora is used in a fuzzy, ahistorical, and uncritical manner in which all manner of movements and migrations between countries and even within countries are included and no adequate attention is paid to the historical conditions and experiences that produce diasporic communities and consciousness—how dispersed populations become self-conscious diaspora communities. Various analytical schemas have been suggested for diaspora studies in general and African diaspora studies in particular. Based on what he regards as the nine common features of a diaspora, Robin Cohen distinguishes between the "victim diasporas" Africans and Armenians , "labor diasporas" Indians , "imperial diasporas" British , "trade diasporas" Chinese and Lebanese , and "cultural diasporas" the Caribbean. Kim Butler, a historian of the African diaspora in Brazil , suggests another schema for diasporan study divided into five dimensions: Diaspora refers simultaneously to a process, a condition, a space, and a discourse: In short, diaspora is a state of being and a process of becoming, a condition and consciousness located in the shifting interstices of "here" and "there," a voyage of negotiation between multiple spatial and social identities. Created out of movement—dispersal from a homeland—the diaspora is sometimes affirmed through another movement—engagement with the homeland. Movement, it could be argued, then, in its literal and metaphorical senses is at the heart the diasporic condition, beginning with the dispersal itself and culminating with reunification. The spaces in between are marked by multiple forms of engagement between the diaspora and the homeland—of movement, of travel between a "here" and a "there" both in terms of time and space. African Dispersals It is quite common in academic and popular discourses to homogenize and racialize the African diaspora and see it in terms of the Atlantic experience of forced migration and in terms of "black" identity. The first ignores African dispersals and diasporas in Asia and Europe , some of which predated the formation of the Atlantic diasporas and which emerged out of both forced and free migrations. The second is largely a legacy of Eurocentric constructions of the continent whereby sub-Saharan Africa, from which North Africa is excised, is seen as "Africa proper," in the words of Georg Wilhelm Friedrich Hegel “ Early-twenty-first-century research has tried to go beyond these limitations. There are numerous dispersals associated with African peoples over time. Colin Palmer has

identified at least six: While such a broad historical conception of diaspora might be a useful reminder of common origins and humanity, it stretches the notion of diaspora too far beyond analytical recognition to be terribly useful. So most scholars tend to focus on the "modern" historical streams of the global African diasporas. Studies of African diasporas focus disproportionately on the Atlantic world, but literature is growing on the Indian Ocean and Mediterranean diasporas. The historic African diasporas can be divided into four categories in terms of their places of dispersal: The challenges of studying intra-Africa diasporas meaningfully are quite daunting, given the extraordinary movements of people across the continent over time. Clearly it will not do to see every migration across the continent as a prelude to the formation of some diaspora. More fruitful is to focus on communities that have constituted themselves or are constituted by their host societies as diasporas within historical memory. And here may be distinguished five types based on the primary reason of dispersal: These intra-Africa diasporas have been studied in their own right, often without using the term diaspora except for the trading diasporas and the slave diasporas. But it should not be forgotten that the other diasporas, insofar as they existed, filtered into the historic diasporas or served as historical switching stations for the emergence of the new African diasporas in the twentieth century. At the same time, the formation of colonial borders and new national identities reinforced their diasporic identities and sometimes pushed them into the circuits of international migration. African Diasporas in Asia and Europe Recent studies clearly demonstrate that the African diaspora has very old roots in Asia, to which Africans traveled as traders, sailors, soldiers, bureaucrats, clerics, bodyguards, concubines, servants, and slaves. Hence unlike the historic Atlantic diasporas, the Indian Ocean diasporas were composed of both forced and free migrants. In India, for example, according to Richard Pankhurst, there were numerous African diasporan rulers and dynasties established between the thirteenth and eighteenth centuries by the Habshi corruption of Habash, the Arabic name for Abyssinia, Sidi corruption of the Arabic Saiyid, or "master", and Kaffir from the Arabic Kafir, or "unbeliever", as the Africans were known, throughout India from the north and west Delhi, Gujarat, the Gulf of Khambhat, Malabar, Alapur, and Jaunpur to the northeast Bengal, the south Deccan, and the west coast. Exploration of the African diasporas in the Mediterranean worlds of western Asia and southern Europe has been fraught with considerable difficulties, not least the fact that until modern times this was the most intensive zone of cultural traffic and communication, in which communities straddled multiple spaces in complex networks of affiliation. The case of the Arabs from the Arabian peninsula, who swept through northern Africa following the rise of Islam in the seventh century, is a case in point. They traversed northern Africa and western Asia, the so-called Middle East, although with the rise of the modern nation-state and national identities, notwithstanding the enduring dreams of the Arab nation, it is possible to talk of, say, the Egyptian diaspora in the Gulf. Before the Atlantic slave trade, the most significant African presence in southern Europe was the Moors from northwestern Africa, who occupied and ruled much of Spain between the early eighth century and the late fifteenth century. As is well known, the Moors made enormous contributions to Spanish culture and society and to the modernization of Europe more generally during those seven centuries, but they are rarely discussed in diasporic terms as an African diaspora. Discussions of African diasporas in the Mediterranean world, which are still relatively scanty, tend to focus on "blacks," that is, Negroid peoples, in ancient Rome or in the Mediterranean lands of Islam, where African diasporas were absorbed into the host communities thanks to the integrative principles and capacities of Islam. Beyond the Mediterranean littoral in Europe, there are ancient African communities from Russia to Britain. The origins of the scattered African communities on the Black Sea coast of the Caucasus mountains are in dispute. Some argue that they were brought there between the sixteenth and nineteenth centuries as slaves for the Turkish and Abkhazian rulers, while others trace their origins many centuries earlier as remnants of an Egyptian army that invaded the region in antiquity. Allison Blakely believes the two explanations may not necessarily be contradictory, in that there were probably different waves of Africans. Modern Russia did not develop a significant practice of African slavery, but some Africans did come as slaves; others came as servants for the wealthy nobility or as immigrants, usually seamen, including some who came from the Americas. One of these Africans was Abram Hannibal from Ethiopia, who arrived as a boy around and was raised as a favorite of Peter the Great, became a general and an engineer, and was the great-grandfather of Alexander Pushkin.

, the great Russian poet. The history of Africans in Britain can be traced back two thousand years, but the African presence became more evident following the rise of the Atlantic slave trade. Many of the Africans worked as domestic servants, tradesmen, soldiers, and sailors. A growing stream of Africans coming for education—a tradition that began in the eighteenth century and accelerated in the nineteenth and twentieth centuries—later joined them. Out of these waves emerged a "black" British culture with its own associational life, expressive cultural practices, literature, and political idioms, all forged in the crucible of unrelenting racial violence and oppression.

The Atlantic Diasporas The Atlantic diasporas are the most recent of the global diasporas and are far better known and researched than the others. The diaspora in the United States often stands at the pedestal, the one against which to judge the identities of the other diasporas. The fact that Brazil has the largest African diaspora in the Americas, indeed in the world, is often forgotten, and so is the fact that in the Caribbean the African diaspora is the majority, rather than a minority population as in the United States. Debates about African diasporan identities have tended to be framed in terms of African cultural retentions or erasure on the one hand and diasporan adaptations and inventions on the other. It is also important to note that there were continuous movements of people from Africa and the diaspora and back that kept connections alive. On the whole, studies of African diasporas in the Americas continue to be heavily focused on national histories. In situations where the African puzzle or presence is marginalized, as is often the case in the United States, excavating the dynamic import of the African cultural, religious, artistic, social, economic, and political imprint on mainstream American society has produced some exciting scholarship. In societies that have tried to "whiten" themselves, such as Argentina, the object has been to demonstrate the African demographic presence. For Brazil, great store has been placed on explaining the remarkable survival and transformation of the Africans and their cultures as well as exposing the brutal realities behind the mystifications of race mixture and cultural syncretism. With their large African populations, the Caribbean islands reflect Brazil in terms of the evident demographic and cultural visibility of the African presence. Also as in Brazil, this presence, ubiquitous though it may be, has not always been valorized—at least not until the black consciousness movement of the s. Perched in the Atlantic in the middle of the Middle Passage, as it were, the African diaspora in the Caribbean in fact embodies all the complex connections, crisscrossings, and cultural compositions of the African diasporas of the Atlantic. Not surprisingly, Caribbean activists and intellectuals played a crucial role in all the transatlantic Pan-African ideologies and movements, from Garveyism to Negritude to socialism.

The New African Diasporas In the twentieth century there were several new dispersals from Africa, a continent divided into colonial territories and later into independent nation-states. Unlike their predecessors, whose communities of identity, either as imagined by themselves or as imposed by others, were either ethnic or racial not to mention sometimes religious, the new African diasporas had to contend with the added imperative of the modern nation-state, which often frames the political and cultural itineraries of their travel and transnational networks. The "new" or "contemporary" African diasporas, as they are sometimes called, can be divided into three main waves: As with the historic diasporas, the challenge has been to map out the development of these diasporas and their identities and relations with the host societies. Needless to say, and also in common with the historic diasporas, the contemporary diasporas are differentiated and their internal and external relations are mediated by the inscriptions of gender, generation, class, political ideology, and sometimes religion. Where they differ from the historic diaspora, complicating analysis, is that they have to negotiate relations with the historic diasporas themselves and also not just with "Africa" but with their particular countries of origin and the countries of transmigration. The revolution in telecommunications and travel, which has compressed the spatial and temporal distances between home and abroad, offers the contemporary diasporas, unlike the historic diasporas from the earlier dispersals, unprecedented opportunities to be transnational and transcultural, to be people of multiple worlds and focalities. They are able to retain ties to Africa in ways that were not possible for earlier generations of the African diasporas. The diasporas of the late twentieth century were even more globalized than those earlier in the century in terms of the multiplicity of their destinations and networks. Particularly rapid in the closing decades of the twentieth century was African migration to Europe, which was characterized by increasing diversification in the number of countries both sending and receiving the immigrants. The African diaspora from the continent and the diaspora itself

grew in Britain and France , the old colonial superpowers. Quite remarkable was the emergence as immigration countries of southern European countries such as Italy, Portugal , and Spain, which were themselves emigration countries. This development was as much a product of the improving economic fortunes in these countries and their integration into the prosperity and political sphere of western Europe as it was of mounting immigration pressures on their borders to the east and the south. New African immigrant communities also formed in central and eastern Europe, especially following the end of the Cold War. By there were , African-born residents in the United States, up from , in This new African diaspora constituted only 2. The African migrants in the United States tended to be exceedingly well educated, in fact they enjoyed the highest levels of education of any group in the United States, foreign-born or native-born. According to the U. Census, among the African-born residents aged twenty-five and above, Diaspora Linkages The continuous formation of African diasporas through migration is one way in which the diaspora and Africa have maintained linkages. This dialectic in the inscriptions and representations of the home-land in the diaspora and of the diaspora in the homeland is the thread that weaves the histories of the diaspora and the homeland together. Two critical questions can be raised. First, how do the different African diasporas remember, imagine, and engage Africa, and which Africaâ€™in temporal and spatial terms? Second, how does Africa, or rather the different Africasâ€™in their temporal and spatial framingsâ€™remember, imagine, and engage their diasporas? Given the complex ebbs and flows of history for Africa itself and for the various regional host lands of the African diasporas, it stands to reason that the engagements between Africa and its diasporas have been built with and shaped by continuities, changes, and ruptures. The fluidity of these engagements is best captured by the notion of flow: The diaspora-homeland flows are often simultaneously covert and overt, abstract and concrete, symbolic and real, and their effects may be sometimes disjunctive or conjunctive.

In this collection authors apply spatial analysis to case studies of social, economic, and political dynamics in West, Central, and East Africa during the nineteenth and twentieth century.

Neoclassical location theorists, following in the tradition of Alfred Weber, tend to focus on industrial location and use quantitative methods. Since the 1970s, two broad reactions against neoclassical approaches have significantly changed the discipline: Marxist political economy, growing out of the work of David Harvey; and the new economic geography which takes into account social, cultural, and institutional factors in the spatial economy. Economists such as Paul Krugman and Jeffrey Sachs have also analyzed many traits related to economic geography. Krugman called his application of spatial thinking to international trade theory the "new economic geography", which directly competes with an approach within the discipline of geography that is also called "new economic geography". As the science of cartography developed, geographers illuminated many aspects used today in the field; maps created by different European powers described the resources likely to be found in American, African, and Asian territories. The earliest travel journals included descriptions of the native peoples, the climate, the landscape, and the productivity of various locations. These early accounts encouraged the development of transcontinental trade patterns and ushered in the era of mercantilism. World War II contributed to the popularization of geographical knowledge generally, and post-war economic recovery and development contributed to the growth of economic geography as a discipline. A "Methodological Examination", published in the American journal *Annals of the Association of American Geographers*, and his critique of regionalism, made a large impact on the field: Contemporary economic geographers tend to specialize in areas such as location theory and spatial analysis with the help of geographic information systems, market research, geography of transportation, real estate price evaluation, regional and global development, planning, Internet geography, innovation, social networks. Theoretical economic geography focuses on building theories about spatial arrangement and distribution of economic activities. Regional economic geography examines the economic conditions of particular regions or countries of the world. It deals with economic regionalization as well as local economic development. Historical economic geography examines the history and development of spatial economic structure. Using historical data, it examines how centers of population and economic activity shift, what patterns of regional specialization and localization evolve over time and what factors explain these changes. Evolutionary economic geography adopts an evolutionary approach to economic geography. More specifically, Evolutionary Economic Geography uses concepts and ideas from evolutionary economics to understand the evolution of cities, regions, and other economic systems. Behavioral economic geography examines the cognitive processes underlying spatial reasoning, locational decision making, and behavior of firms [6] and individuals. Economic geography is sometimes approached as a branch of anthropogeography that focuses on regional systems of human economic activity. Spatiotemporal systems of analysis include economic activities of region, mixed social spaces, and development. Alternatively, analysis may focus on production, exchange, distribution, and consumption of items of economic activity. Allowing parameters of space-time and item to vary, a geographer may also examine material flow, commodity flow, population flow and information flow from different parts of the economic activity system. Through analysis of flow and production, industrial areas, rural and urban residential areas, transportation site, commercial service facilities and finance and other economic centers are linked together in an economic activity system.

Chapter 7 : Outline of geography - Wikipedia

Get this from a library! The spatial factor in African history: the relationship of the social, material, and perceptual. [Allen M Howard; Richard M Shain;] -- "The authors of this inter-disciplinary collection examine the role of space in six areas of West, Central and East Africa during the nineteenth and twentieth centuries.

Johannesburg, city, Gauteng province, South Africa. Aerial view of the central business district of Johannesburg, South Africa. The city was initially part of the Transvaal , an independent Afrikaner, or Boer , republic that later became one of the four provinces of South Africa. The result is a city of extraordinary contrasts, of glass and steel skyscrapers and fetid shantytowns, of internationally recognized universities and widespread illiteracy, of glittering abundance and desperate poverty. Physical and human geography The landscape The city site Johannesburg is situated on the Highveld see veld , the broad, grassy plateau that sweeps across the South African interior. The city bestrides the Witwatersrand , or Rand, a string of low, rocky ridges that constitutes the watershed between the drainages into the Indian and Atlantic oceans. Aside from a few small streams and artificial lakes, Johannesburg lacks water. The city owes its location to the presence of an even more precious resource: The city grew on the edge of the Witwatersrand Main Reef, a subterranean stratum of gold-bearing quartz-silica conglomerate that arcs for hundreds of miles beneath the Highveld. Remnants of the industryâ€™rusting headgear, towering yellow-white mine dumps, copses of dusty Australian bluegum trees imported for underground timberingâ€™still litter the landscape. Climate Johannesburg has a temperate climate. The city enjoys about eight hours of sunlight per day in both winter and summer. Rainfall averages about 28 inches millimetres per annum, but the total varies considerably from year to year. What rain the city receives falls almost exclusively in the summer months, often in spectacular late-afternoon electrical storms. Air pollution poses a significant problem, especially in the winter months, when thermal inversions impede the westward flow of air from the Indian Ocean. The city layout Central Johannesburg, the commercial and financial heart of South Africa, is laid out in a rectangular grid pattern that is unchanged from the first city survey in Streets are narrow and cast into shadow by high-rise concrete blocks, creating an almost tunnelloike effect. Architecturally, the city is a hodgepodge, reflecting decades of rapid growth and a singular indifference to historic preservation. The tents and clay huts of the original mining camp are gone, as are most of the ornate, gabled Victorian edifices that sprang up in the s. Markhams Building, on Pritchard Street, is a conspicuous exception. The early 20th century brought a variety of architectural styles and movements. Whatever architectural distinction the city had was lost in the decades after World War II amidst a sea of nondescript high-rise blocks. Greater Johannesburg, an area of more than square miles, comprises more than suburbs and townships. At least three times that number live in Soweto South-West Townships , a sprawling urban complex 10 miles southwest of the city. The balance of the city is occupied by whites. Accommodation varies in character and quality. Soweto is notorious for its endless rows of municipally built, two-room matchbox homes, yet it also has a few prosperous enclaves as well as teeming squatter camps, where tens of thousands live without water, electricity, or sanitation facilities. White accommodation varies from suburb to suburb. Northern suburban homes typically include large, flowering gardens and swimming pools. Most are surrounded by high fences. At least a dozen different languages are in widespread daily use in Johannesburg. The majority of the white population is of English and Afrikaans descent, but the city also includes substantial Portuguese, Greek, Italian, Russian, Polish, and Lebanese communities. The black population includes representatives from every ethnic and linguistic group in southern Africa. Zionists, adorned in colourful robes, hold outdoor services all across the city on Sundays. The economy Commerce and industry Johannesburg is a centre of mining, manufacturing, and finance. All the mining houses are headquartered in the city, as is the Chamber of Mines, which regulates the industry. Local factories in Johannesburg and on the East Rand produce a great variety of goods ranging from textiles to specialty steels. A substantial engineering sector serves the needs of the mining industry. The Johannesburg Stock Exchange, founded in to raise capital for deep-level mining, lists more than companies. While Pretoria , the South African capital, is only 40 miles to the north, most state ministries have offices in Johannesburg.

Many foreign countries retain consular facilities, largely to service the needs of overseas firms, hundreds of which operate in the city. Transportation Johannesburg is a hub for local, national, and international travel. Railroads and multilane freeways crisscross the metropolitan area, carrying hundreds of thousands of daily commuters to and from outlying suburbs and townships. A municipal bus system operates within the city, and a separate, private bus company operating under a state monopoly connects the city centre with Soweto and Alexandra. The inadequacies of the latter have fostered a burgeoning local taxi industry. Tambo International Airport, 14 miles northeast of the city centre, offers regularly scheduled service between Johannesburg and most cities in southern Africa, as well as direct flights to Europe, North and South America, Australia, and Asia. Administration and social conditions Government South Africa possesses a federal system of government, with authority divided between national, provincial, and local levels of government. Local authority for Johannesburg rests with the City of Johannesburg Metropolitan Municipality, which includes representatives from all across the metropolitan area. In extending the municipal borders to include previously disfranchised black townships such as Soweto and Alexandra, political leaders hope to facilitate some equalization of revenues and services between white and black areas. Public services Local bus service, fire fighting, and sanitation remain the province of the municipality, but other responsibilities—such as the provision of housing in black townships—have been assumed by the Gauteng regional legislature. Most electricity is provided through the Electricity Supply Commission ESKOM, a national parastatal institution; privately owned power stations also provide some electricity to the city. Water is supplied by the Rand Water Board. Municipal police oversee traffic control; other policing is provided by the South African Police Services. In black townships rates of child mortality are significantly higher and life spans far shorter than in white neighbourhoods. Tuberculosis, virtually eradicated among whites, remains endemic in townships and migrant hostels. Addressing such historical inequities is one of the chief challenges of the national government. Johannesburg has numerous hospitals and clinics, designated under apartheid for use by specified race groups but now legally open to all. The largest hospital in Johannesburg, and indeed in all Africa, is Baragwanath, a sprawling complex on the northern edge of Soweto; it serves more than 5, patients per day, placing a severe burden on limited facilities. Education Primary and secondary schools range widely in character. Racial segregation, abolished in law, remains common in practice. Cultural life Johannesburg boasts a rich, if strangely schizophrenic, cultural life. While the 1,seat Civic Theatre stages European operas and American musicals, many smaller companies nurture the talents of local actors and playwrights, white and black. The city has many museums and libraries. Johannesburg Public Library, first established in, is the centre of an extensive network of branch libraries. Local museums specialize in geology, Africana, military history, archaeology, transport, banking, costume, and Judaica. Visitors interested in a taste of old Johannesburg can visit Gold Reef City, an amusement park located a few miles south of the city on the site of a defunct gold mine. Museum Africa and the Bensusan Museum of Photography are both at the old market. Matt Stabile Blessed as they are with a warm sunny climate, Johannesburgers spend a considerable amount of time outdoors. The northern suburbs feature broad swaths of open space for bird-watching and picnicking. Weekend cookouts—braaivleis, in local parlance—are a summertime ritual, especially among Afrikaners. Like other South Africans, Johannesburg residents tend to be avid sportsmen. The years that followed brought several modest strikes, but the Witwatersrand Main Reef eluded searchers until, when George Harrison, an Australian prospector, chanced upon an outcropping on a farm called Langlaagte. Ironically, Harrison failed to appreciate the significance of his find: Others were more farsighted. By mid an army of diggers had descended on the Witwatersrand, hacking away with picks and shovels along a line that soon stretched 40 miles west to east. In response to this influx, the government of the Transvaal, the small Boer republic under whose jurisdiction the Witwatersrand fell, dispatched two men, Vice President Christiaan Johannes Joubert and Deputy Surveyor-General Johann Rissik, to inspect the goldfields and identify a suitable city site. The new city was called Johannesburg, apparently in their honour. Fortune hunters from as far afield as Australia and California joined skilled Cornish and Welsh miners, who brought to South Africa a strong trade-union tradition. Destitute Afrikaners, driven from their rural homes by debt and drought, clustered in slums such as Brickfields and Vrededorp. Blacks from every corner of the southern African subcontinent migrated to the

city, often in large ethnic cohorts, adding a dozen more voices to the cultural and linguistic babel. Most blacks worked on the mines, completing six- and nine-month contracts before returning to their rural homes. Others settled permanently in the swelling city, carving out niches as rickshaw drivers, domestic workers, and washermen. By Johannesburg had become a city of , people. Conceived in avarice , the young city nurtured every species of vice. Banks and boardinghouses jostled for space with more than saloons. The predominantly male population provided a robust market for prostitution. It is a city of unbridled squalor and unfathomable squander. Tons of the pebbly conglomerate had to be mined, crushed, amalgamated with mercury later cyanide , and retorted in order to produce even an ounce or two of gold. South African gold mines would eventually reach depths of over two miles, making them far and away the deepest mines in the world. All these factors promoted a rapid consolidation of the industry. By the mids control of the entire Witwatersrand gold industry rested in the hands of a half-dozen massive mining houses, each of which commanded thousands of workers and millions of dollars in capital, most of it raised from investors in Europe and the United States. Robinson, who had made their fortunes on the Kimberley diamond fields and well understood the exigencies of large-scale industrial mining. Working under the auspices of the newly formed Chamber of Mines, the Randlords strove to establish the profitability of their industry by rationalizing production and relentlessly squeezing down costs, especially the cost of labour. Boer officials extracted hefty bribes and handed out valuable concessions on supplies to political allies. Worse, the Transvaal government seemed unable to enact or enforce the kind of discriminatory taxes and rigorous master-servant laws that the Randlords regarded as essential to their campaign to reduce black labour costs. In , British officials tacitly endorsed the Jameson Raid , a coup attempt against the Transvaal government conceived by the mining magnate Cecil John Rhodes. In September the British government delivered an ultimatum to the Boers demanding the immediate enfranchisement of all white uitlanders. When the fighting ceased two and a half years later, the Transvaal and its sister republic, the Orange Free State , were colonies of the British Empire. British troops entered Johannesburg unopposed in June

Chapter 8 : Urbanization in Africa - African Development Bank

Social history & African environments / edited by William Beinart & JoAnn McGregor. GF S63 The spatial factor in African history: the relationship of the social, material, and perceptual / edited by Allen M. Howard, Richard M. Shain.

Another impetus that has influenced the development of the field are ecofeminist and other environmentalist viewpoints on nature-society relations including questions of animal welfare and rights. Language geography "studies the geographic distribution of language or its constituent elements. There are two principal fields of study within the geography of language: Geography of languages" deals with the distribution through history and space of languages, [13] Linguistic geography" deals with regional linguistic variations within languages. Economic geography" study of the location, distribution and spatial organization of economic activities across the world. Subjects of interest include but are not limited to the location of industries, economies of agglomeration also known as "linkages" , transportation, international trade and development, real estate, gentrification, ethnic economies, gendered economies, core-periphery theory, the economics of urban form, the relationship between the environment and the economy tying into a long history of geographers studying culture-environment interaction , and globalization. Marketing geography" a discipline within marketing analysis which uses geolocation geographic information in the process of planning and implementation of marketing activities. Transportation geography" branch of economic geography that investigates spatial interactions between people, freight and information. It studies humans and their use of vehicles or other modes of traveling as well as how markets are serviced by flows of finished goods and raw materials. It also deals with accessibility to health care and spatial distribution of health care providers. Time geography" study of the temporal factor on spatial human activities within the following constraints: Authority - limits of accessibility to certain places or domains placed on individuals by owners or authorities Capability - limitations on the movement of individuals, based on their nature. For example, movement is restricted by biological factors, such as the need for food, drink, and sleep Coupling - restraint of an individual, anchoring him or her to a location while interacting with other individuals in order to complete a task Historical geography" study of the human, physical, fictional, theoretical, and "real" geographies of the past, and seeks to determine how cultural features of various societies across the planet emerged and evolved, by understanding how a place or region changes through time, including how people have interacted with their environment and created the cultural landscape. Political geography" study of the spatially uneven outcomes of political processes and the ways in which political processes are themselves affected by spatial structures. Basically, the inter-relationships between people, state, and territory. Electoral geography" study of the relationship between election results and the regions they affect such as the environmental impact of voting decisions , and of the effects of regional factors upon voting behavior. Geopolitics" analysis of geography, history and social science with reference to spatial politics and patterns at various scales, ranging from the level of the state to international. Strategic geography" concerned with the control of, or access to, spatial areas that affect the security and prosperity of nations. Military geography" the application of geographic tools, information, and techniques to solve military problems in peacetime or war. Population geography" study of the ways in which spatial variations in the distribution, composition, migration, and growth of populations are related to the nature of places. Tourism geography" study of travel and tourism, as an industry and as a social and cultural activity, and their effect on places, including the environmental impact of tourism , the geographies of tourism and leisure economies, answering tourism industry and management concerns and the sociology of tourism and locations of tourism. Urban geography" the study of urban areas, in terms of concentration, infrastructure, economy, and environmental impacts.

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