

Is the underdevelopment of northern Ghana a case of environmental determinism or governance crisis?

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Abstract

Since the late 1990s, the arguably most problematic regions in Ghana—the three northern regions, accounting for half of the country’s landscape yet the least developed—have come under increased academic scrutiny. This article seeks to interrogate some conventional arguments which attempt to attribute the region’s underdevelopment to its physical and climatic challenges, which are no more serious than other West Africa Sahelian countries where greater economic development is visible. Tracing the region’s past policy trajectories, we argue that adopting a rather ubiquitous deterministic lens oversimplifies or overlooks not only the flawed vestiges of colonial and post-colonial administrations but also the policy inconsistencies pursued and still pursued in the Fourth Republic. We conclude that the colonial policy biases, coupled with successive rounds of post-independence policy (dis)continuities, tend to gloss over fundamental problems underpinning the region’s low productivity and underdevelopment. These tendencies conceptually legitimize and constitute a key strategy in explaining the region’s developmental problems. Within such a configuration, a successive blend of failures and limitations in development policy has tended to be (re)inscribed in the region’s governance, ignoring long-established local values and preferences and thereby perpetuating underdevelopment in the region.

Keywords: Development, governance, resource-starved, environmental determinism, northern Ghana.

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Introduction

Broadly speaking, Ghana's geography exhibits two faces: the three northern regions, and the rest. Understanding the root causes of this duality, valid from both physical or human geography perspectives, reveals many of the country's spatial problems. Prominent among these problems is the northern regions' obvious underdevelopment, which dates back to colonial adventurism (Dickson, 1968; Songso, 1979; Bening, 1990). Conceptually, the duality has historically been explained using the region's natural, physical, and climatic conditions, including the lack of natural resources and the poor soil quality which yields little owing to climate variability (Plange, 1979; Brukum, 1998). Also accused is the increasing soil erosion the region suffers owing to the strain of mounting population pressure, coupled with climatic changes providing lengthy dry seasons of 'inactivity' and leading to periodic hunger (Plange, 1979: 5). Even prior to the British adventurism, Brukum (1998) reports that there were distressing events leading to the dislocation and exhaustion of both human and natural resources, notable among these events being the activities of the Samory and Babatu slave raiders. These conditions are often mentioned together to explain the regions' underdevelopment, the uncertainty of life in northern Ghana, and the people there being 'suspicious of all strangers' (ibid. 17). These conditions discouraged trade and agriculture and compelled the (post)colonial authorities to adopt measures with the hope of restoring peace and confidence and reversing the mass exodus to the South (Dickson, 1968; Benneh, 1973b).

Critics of this account, a situation Plange (1979: 4) described as 'naturalistic fallacy', make reference to other factors, such as the exigencies of the (pre)colonial past, particularly regarding the British discriminatory policies in a region they had acquired through treaties they signed with chiefs in the late 19th century. Plange (1979) further demonstrated how the colonial economy's need for labour in the mines and cocoa plantations created an impetus for the southbound migration rather than the North's mythical deficiency in resources. In support of his argument, Plange notes that prior to the colonial conquest, the region's economy was at the heart of the 19th century trade routes and food production (the world's circuit of economic system), defying the arguments of the 'naturalistic causal fallacies'.

Our article takes a leaf from Plange's argument. We seek to demystify the environmentalist prescription and maintain that the region's continuous marginality—socially, politically, and

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economically—after over 60 years of independence defies the ideationally, if not practically, defunct ideology of natural deterministic explanations. We consider that the socio-economic structures and patterns of life activity which represent underdevelopment are ‘inauthentic’—that is, they have not emerged as the local population interacted directly with its environment. They are rather the consequences of an interplay of factors, including the region’s colonial experiences, which distorted its pre-capitalist modes of production; its post-independence governments’ policy inconsistencies; and the centrifugal forces of globalization which have magnified tendencies towards spatial fragmentation and socio-economic polarization (see Hutchful, 1996; Oteng-Ababio, 2017). As Plange suggests, to accept these conditions as ‘natural’ is not only a misunderstanding of the dialectics of man and nature, but is also ahistorical, theoretically myopic, and empirically erroneous (Plange, 1979). Under such conditions, how then do we make sense of the relative development of countries beyond northern Ghana—for example, in Burkina Faso? Although we do not discount the influence of the region’s environment, to refer solely to and/or emphasize these natural determinants is to imprison socio-historical processes and turn social scientific analysis into descriptions of ‘natural mystics’ (ibid. 5). We call instead for a restructuring of the national accumulation processes in ways that can unleash the growth potential of the entire nation to benefit all citizens rather than just a few, an objective that underpins the vision and mission of the Savannah Accelerated Development Authority (SADA).¹

Introspective of the deterministic thesis

Philosophical reflections on the relations between humanity and the environment date back to the works of ancient Greeks and Romans (see Holt-Jensen, 2009). But as that task came to an end in the late 1800s and early 1900s, new research frontiers were being sought (ibid.). Many geographers turned to what was then a hot topic in social science: the racial differentiation of humankind (Mitchell, 2000: 17). Others attempted to distil geographical laws from the age-old theory of

¹ Savannah Accelerated Development Authority (SADA) is a Government of Ghana agency responsible for coordinating a comprehensive development agenda for the savannah ecological zones comprising the three northernmost regions and stretches of Brong Ahafo and Volta Regions that are contiguous to the northern region of Ghana.

environmental determinism, seeking global correlations among climate, soils, and landforms, on the one hand, and social, political, and cultural forms, on the other (see Holt-Jensen, 2009). In general, the deterministic thesis held the belief that the environment (most notably its physical factors, such as landforms and/or climate) is a major determinant of the patterns of human culture and societal development. Indeed, early philosophers—for example, Strabo (63 BC – 24 AD), Plato (427–347 BC), and Aristotle (384–322 BC)—used climatic factors to explain why the Greeks were more developed in the early ages than societies in hotter and colder climates. In addition, Ibn Khaldun (1332–1406) attributed the dark skin of the people of Sub-Saharan Africa to the hot tropical climate of the area.²

Significantly, the view that the environment had an influence on people and the development of human society became central to the environmental determinism thesis in the late 19th century (Holt-Jensen, 2009). Perhaps the influential seminal work on the subject was by an American geographer, Ellen Churchill Semple (1863–1932), whose work entitled *Influences of Geographical Environment* (1911) begins as follows:

Man is a product of the earth's surface. This means not merely that he is child of the earth, dust of her dust, but that the earth has mothered him, fed him, set him tasks, directed his thoughts, confronted him with difficulties that have strengthened his body and sharpened his wits, given him problems of navigation or irrigation and at the same time whispered hints for their solutions. (Semple, 1911, cited in Holt-Jensen, 2009: 64)

In Semple's opinion, human temperament, culture, and economic life could all be the result of environmental influences. She argued that 'the northern peoples of Europe are energetic, provident, serious, thoughtful rather than emotional, rational rather than impulsive' (Semple, 1911: 620). Other American geographers who championed the tenets of determinism include Ellsworth Huntington (1876–1947), a teacher at Yale University in the early 20th century, who returned repeatedly to his pet theory: the idea that 'climatic energy' determined human accomplishments. To him, 'civilization could thrive only where allowed by climate', and he 'related the rise of

² For more information on this topic, see Holt-Jensen, A. (2009). *Geography: History and Concept*, 4th ed., London: Sage.

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civilization in the mid-latitudes and the lack of development in the tropics to climatic conditions' (Holt-Jensen, 2009: 65).

The deterministic thesis soon came under a barrage of criticisms, primarily from German geographers spearheaded by Alfred Hettner (1859–1941), who sought to place geography on a firm philosophical and scientific foundation. According to Hettner, 'as far as we restrict discussion to the influence of nature upon human beings, we [are] only dealing with possibilities, not certainties' (Holt-Jensen, 2009: 65). Hettner, in 1927, considered that geographical synthesis is distorted when nature is regarded as dominant and humanity as subsidiary, adding philosophically that 'there are no necessities, only possibilities', a position which was strongly urged by the French historian Lucien Febvre in 1922. Febvre termed this approach possibilism. The possibilists' doctrine is captured well in a dictum of Febvre ([1922] 1925: 235): 'There are nowhere necessities, but everywhere possibilities; and man, as master of the possibilities, is the judge of their use.' Suffice it to add that though Febvre invented the term, the possibilists' way of thinking had begun earlier with the works of 'French geographers Vidal de la Blache (1845–1918) and Jean Brunhes (1869–1930), followed by advocates in the USA including Isaiah Bowman (1878–1950) and Carl Sauer (1889–1930)'.³

Theoretically, the possibilists do not deny that there are natural limits to the activities of humanity, but they emphasize the significance of humanity's choices of activity rather than the natural limitations to it. Vidal de la Blache points out the futility of setting humanity's natural surroundings in opposition to its social milieu (or drawing boundaries between natural and cultural phenomena) and regarding one as dominating the other—since they are united and inseparable (Holt-Jensen, 2009: 66). To him, each community adjusts to the prevailing conditions in its own ways. The result of the adjustment may be reflected in centuries of development, emphasizing that in the course of time, humanity and nature adapt to each other like the snail to its shell, where the relationship becomes so intimate that it is not possible to distinguish the influence of humanity on

³ Holt-Jensen, A. (2009). *Geography; History and Concept*, 4th ed., London: Sage.

nature from that of nature on humanity (ibid. 68). Amid the diversity of economic growth and development, most regions retain strong vestiges of their physical environmental conditions and/or inherited development planning systems largely inappropriate to prevailing local conditions. Even where largely ignored in practice, they can be suddenly redeployed for politico-social interests. Such episodes highlight the gulfs between political elite perceptions and priorities and the needs of often impoverished ‘ordinary’ citizens, whose grip on environmental resources and services is frequently precarious, but essential.

Against this backdrop, and in order to develop our argument of the need to transcend the discursive constraints of the different analytical traditions in the context of new development challenges, we turn now to examine how the preoccupations with environmentalism and narrow approaches to development discourses and policies confront the diversity of lived realities in northern Ghana. To date, the region’s natural conditions, embracing climatic changes and quality of soil, are held to be crucial in explaining its underdevelopment (see Plange, 1979: 4). Framed in this way, nature is held to be unkind, denying the region resources which could have enhanced its development (Dickson, 1968; Plange, 1979). Such is an ‘exercise in futility’ (Vidal de la Blache, cited in Holt-Jensen, 2009: 66) or an attempt to set humanity’s natural surroundings in opposition to its social milieu, taking no account of the exigencies of the colonial past, which sought to re-arrange the existing patterns of economic activity to guarantee cheap sources of raw materials and labour and to create a colonized economic system (Plange, 1979). Our particular focus is shifted to the discursive practices with respect to government policy inconsistencies and discontinuities, which are becoming increasingly real in the poorest region (in the country), and which can no longer be ignored or deferred as a problem to be dealt with in the future.

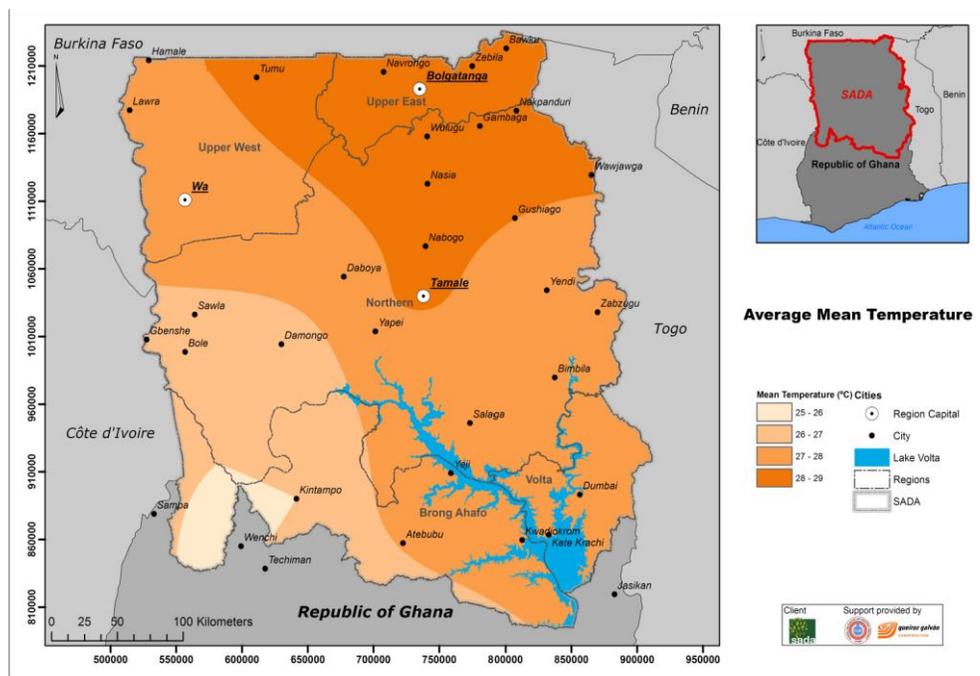
Northern Ghana development in perspective

Northern Ghana, for the purposes of this paper, includes Upper West, Upper East, and Northern regions—the three poorest regions in Ghana (GSS, 2013). These regions constitute 54% of the land mass of the country (Benneh, 1972; Plange, 1979), yet their combined contribution to the national economy is relatively insignificant (Gyasi et al., 2014; Fuseini & Kemp, 2015). Forming the bulk of today’s SADA zone (Act 805 of 2010) and encompassing 63 administrative districts, the area’s savannah ecological vegetation is unique, with clear historical, geopolitical, and ethnic

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connotations (GSS, 2013). The general terrain is defined by a dissected plateau with rivers draining into Lake Volta. Climatologically, these agro-ecological zones—about half of which are made up of Guinea and Sudan Savannah—have a uni-model tropical monsoon, allowing for only one growing season (major season). The single growing season is bound by the Harmattan period,⁴ which begins in December and ends in March (Oppong-Anane, 2006). Annual precipitation in Ghana ranges from 600 to 2800 mm, but this generally decreases from the hot and humid south-west coast, north, to the relatively hot and dry savannah (average of 1000 mm). The relative humidity also tends to decrease from south to north, creating a general increase in evapotranspiration potential in the north relative to the south (Barry et al., 2005). Figures 1a & 1b present the average mean temperature and the annual precipitation respectively within the SADA zone.

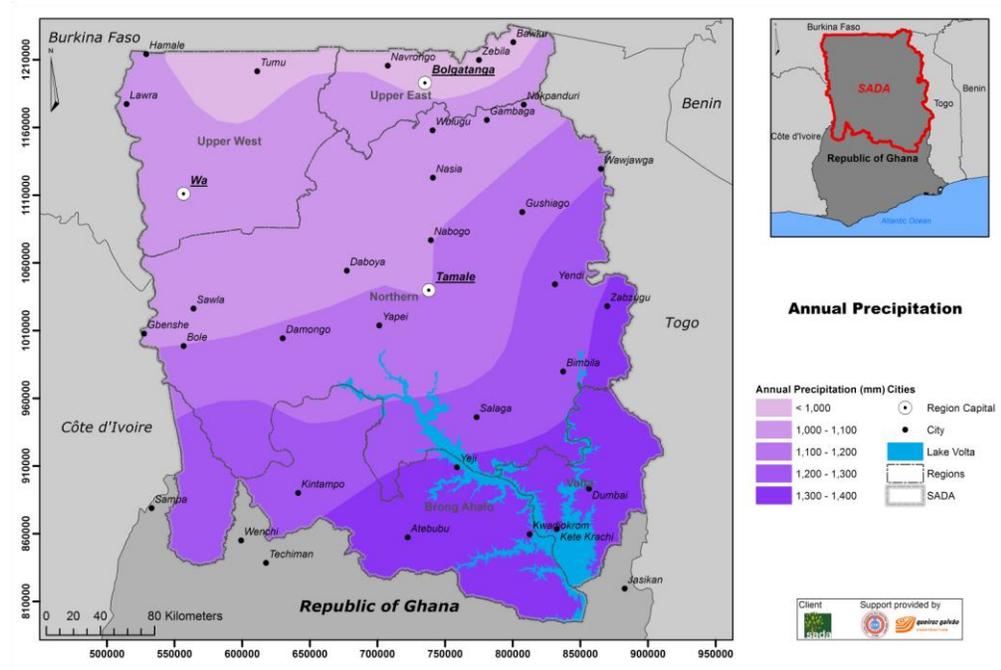
Figure 1a: Map showing the average mean temperature within the SADA zone



⁴ Harmattan refers to the hot, dry continental winds that blow from the north-east across the Sahara Desert and into Ghana, causing extremely hot, dry days and cool nights

Source: SADA Office, Accra. (2016)

Figure 1b: Map showing annual precipitation within the SADA zone



Source: SADA Office, Accra. (2016)

Demographically, the combined population of the three regions in the most recent (2010) national census was 4,228,116, representing a 27.5% increase over that of 2000 (3,317,345). The region has a relatively youthful age structure, with 80.9% of persons below 39 years (GSS, 2013). It also remains in general agrarian (71.8%), but Tamale (the region’s most urbanized city) has transitioned from predominately agrarian (70%) at independence (1957) to largely service-based (Fuseini & Kemp, 2015). For instance, only 20% of its economically active population are in agriculture, while 60% and 13.2% are in service delivery, manufacturing-related activities (GSS, 2013). In terms of education, the region is the least literate among all regions in the country, recording a literacy rate of 37% in 2010 compared with the national rate of 74%, and the rates in Accra and Kumasi are 90% and 83%, respectively (GSS, 2013). Table 1 presents some of the socio-economic characteristics of Northern Ghana.

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Table 1a: Comparative analysis of some socio-economic characteristics among the regional capitals of Ghana

Regional Capitals	Population (**)	Population (15-34)	Regional Poverty Rates	Level of Sanitation/ Percentage of house holds with W/C (*)	In-house Pipe water (*)	Electricity coverage (mains) (*)
Accra	2,070,463 (51.6)	1,203,548	5.6	33.0 (31.0)	31.8 (26.3)	93.8 (87.1)
Kumasi	2,035,064 (42.5)	652,843	14.8	42.5 (23.2)	42.8 (22.8)	91.1 (73.6)
Tamale	371,351 (15)	85,532	50.4	10.1 (2.4)	39.8 (8.7)	82.2 (36.1)
Takoradi	311,206 (13)	219,420	20.9	38.7 (13.4)	31.4 (10.4)	93.1 (43.1)
Cape Coast.	169,894 (7.7)	79,500	18.8	38.4 (9.2)	37.7 (9.3)	91.7 (66.1)
Ho	104,532 (4.9)	65,806	33.8	25.6 (6.0)	25.6 (7.4)	76.4 (49.6)
Koforidua	87,315 (3.3)	73,082	21.7	30.3 (6.5)	34.1 (8.8)	86.8 (77.6)
Sunyani	74,240 (3.2)	54,910	27.9	33.5 (6.7)	29.9 (6.1)	80.1 (53.8)

Wa	71,051 (10.1)	45,076	70.7	10.1 (3.1)	12.0 (5.4)	72.1 (30.9)
Bolgatanga	65,549 (6.26)	47,844	44.4	12.5 (3.4)	23.2 (6.5)	53.5 (11.6)

*(Regional percentages of sanitation, in-house pipe water and electricity coverage in brackets. ** Percentage share of the total regional population in the brackets

Source: Ghana Statistical Service (2013). *The Ghana Poverty and Inequality Report: Using the 6th Ghana Living Standards Survey*.

Source: Ghana Statistical Service (2013), *2010 Population and Housing Census, National Analytical Report*

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Table 1b: Comparative analysis of national socio-economic characteristics with the regional data of Accra and Tamale

Description	Unit	1974-1980	1984-2000	2000-2010
People (Urban growth rate)				
National	Per annum	3.3	4.6	4.2
Regional (Accra)	Per annum	3.5	3.7	3.5
Regional (Tamale)	Per annum	4.9	3.1	4.4
Economy (Mean/capita income)				
National	Ghana cedis/capita	52	40	24.2
Regional (Accra)	Ghana cedis/capita	26	5	5.6
Regional (Tamale)	Ghana cedis/capita	63	69	50.4
Economy (Poverty incidence)				
National	Ghana cedis/capita	*	*	5,346.9
Regional (Accra)	Ghana cedis/capita	-	-	7,730.7*
Regional (Tamale)	Ghana cedis/capita	-	-	1,801.9*
Household size				
National	Level (%)	4.9	5.1	4.4
Regional (Accra)	People / sq. km.	3.9	4.6	3.8
Regional (Tamale)	Per cent	8.7	7.4	7.7
Education (Illiteracy growth rate)				
National	Per annum	3.3	4.6	4.2
Regional (Accra)	Per annum	3.5	3.7	3.5
Regional (Tamale)	Per annum	4.9	3.1	4.4
Literate population (above 11 years)				
National	Level (%)	*	57.4	74.1
Regional (Accra)	People /sq. km.	-	81.6	89.3
Regional (Tamale)	Per cent	-	23.8	37.2

Source: GSS, (2014). * Signifies non-availability of data. ** Calculated based on data collected from the Finance Ministry

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Much can be gleaned from the above characteristics. For example, the region's rate of population growth and the age structure have implications for governance's response in job creation and infrastructure provision (e.g. education, health, and housing facilities) to support the evolving local economic activities. The low literacy rate can also impact the region's economic development (ibid.), including people's chances of getting formal sector employment.

Some conclusions are apparent. First, the North clearly lags behind the South economically; or, put differently, the average poor person in the North is further below the poverty line than his/ her counterpart down South. Statistically, between 1991 and 2006, the South reduced its incidence of poverty by 58.66%, compared with only 8.87% in the North. Second, the latter had a poorer growth performance (only 35%) than the former in the same period (Fuseini & Kemp, 2015). Relatedly, inequality rose faster in the North (25%) than in the South (9.7%) between 1991 and 2006, resulting in a ruthless division with cocooned islands of extreme wealth and social power in the South and places of insecurity, violence, and deprivation in the North (Songsore, 2003), where lives are permanently subjugated by the power of uncertainty (Oteng-Ababio & Grant, 2017) and the tyranny of death (Bagson & Owusu, 2016). Typically, the very fact of living in the North is reduced to the elementary art of learning how not to be turned into a *mort-vivant* (living-dead), since besides the endless anxiety, the North is also characterized by its shocking infrastructure decay and architectural decline (Fuseini & Kemp, 2015), constituting a 'physical life of crisis' (Oteng-Ababio, 2017). To appreciate and understand how this duality emerged and is perpetrating itself within the Ghanaian territorial entity is the subject of this paper, and this will be captured in the following sections describing the various historical epochs within the country's development trajectories.

The economy in (pre)colonial times

Prior to Ghana's (then Gold Coast) encounter with its colonial masters around the 20th century, its economy had long been trade-dependent, and this pre-eminence was seen as being responsible for the region's space relations, a subject that has received much research attention (Dickson, 1968; Songsore, 1979; Bening, 2005). The general consensus among most researchers is that the North prospered significantly by its entrepot position (between Ashanti and Western Sudan); and Salaga, for example, a town founded around the 1650s as a zongo (strangers' quarter) (Benneh, 1972),

grew rapidly after the Ashanti re-routed the kola trade route through it (Plange, 1979). Hence, all the principal commodities traded at Salaga at the time originated from the North, except slaves. However, the defeat of the Ashanti by the British in 1874 led to the closure of the Kumasi–Salaga trade route and, thus, the cessation of kola nut supplies (the main attraction held for foreign merchants) and ultimately the ‘death’ of Salaga. Indeed, according to Benneh (1972), when Captain Binger visited Salaga in 1888 the town was but a shadow of its former self. Plange (1979) believes the region’s economic plight worsened in the last two decades of the 19th century not only because of the distribution of the North–South trade but also because the Anglo–German political rivalries fostered by inter-tribal battles, as well as the slave raids by Samori and Babatu, greatly disrupted the orderly economic life, particularly in Grunsi.

Dickson (1968) noted that the export of processed palm oil developed slowly and became a principal source of revenue in the South only after the British abolished the slave trade in 1807, though mining of alluvial gold remained profitable in most parts of the Ashantis. However, the British annexation of Ashanti around 1902 shifted most people principally into the production of cocoa, oil palm, rubber, coffee, and cotton for export. In 1876, the British had reformed the gold industry by pioneering ‘modern methods’, which added to the exports portfolio. In all these developments, the North was made to remain ‘orphaned’, clinging without choice to its traditional system of agriculture, which was sufficient only for home consumption, except for cotton’s occasional yield of a surplus for export. When critically analysed, it appears the colonial policies consistently failed to consciously integrate the national economy and/or build the human capital or harness the economic potentials of the North (Songsore, 2003; Bening, 2005; Kuui-re, 2009). This partly explains why the shifting cultivation method, a rudimentary answer to the challenge posed by the savannah environment and one which had been managed more effectively in other Sahelian countries, remained unchanged in northern Ghana.

The vestiges of British colonial policy

The British dominance in the Gold Coast did not come on a silver platter: it emerged from political rivalries, and they formally acquired the North through treaties signed with some northern chiefs in the late 1800s (Dickson, 1968; Plange, 1979; Bening, 1990). Thereafter, the administration’s pre-occupation shifted to stopping the raging tribal wars and slave raids that had plagued the region (Plange, 1979; Brukum, 1998). Plange (1979) argues that the region’s aerial extent (about 40,000

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sq m) made the task daunting with just a skeletal staff. Indeed, the region's first commissioner (Lt-Col. Northcott) tactically appointed some paramount chiefs in the region to innumerable entities designated as 'native states' backed by a strong police force between 1905 and 1912 (ibid.). The relative serenity that dawned on the region thereafter ushered in a rapid growth of the settlements as their trade increased with the surrounding countryside, though this was nowhere near its pre-colonial (before 1874) economic fortunes. Ultimately, the settlement's middleman role was largely nullified when the Ashanti re-directed the bulk of their primary products towards the coastal ports for shipment overseas. The region had to rely solely on tolls exacted on cattle and kola nuts from caravan traders. Even with that, a later policy failure saw its dwindling and eventual collapse. Specifically, the caravan tolls were abolished in 1908 as a way of inducing the cattle traders to bring in more cattle from the then Upper Volta when the Public Health Department launched an 'eat-more-meat' campaign in Ashanti (Dickson, 1968). However, the policy backfired because the traders had regarded the toll as entitling them to official protection and therefore became sceptical of their safety once the 'protection money' was abolished.

Further policy directions did not favour the North either. In all, the British initiated 'a policy of isolation' and introduced a series of desultory policies with the intent of rearranging the existing economic activities to meet their own developmental needs (Kuu-ire, 2009). In the words of Kuu-ire, in the late 1940s, the British policy towards the North was 'a deliberate attempt to isolate the Northern Territories from the rest of the country' (Bening, 1990). A few examples will suffice. First, through an Order in Council, a Protectorate was established in the North, instituting an administration formally distinct from the South. A suggestion was even made for an annual tax to be collected 'before the pernicious doctrine of individual irresponsibility filters through from the coast' (Plange, 1979: 17). There were also attempts at introducing a separate coinage for the Protectorate (northern Ghana).

A further isolationist policy was also evident in the area of education in the Protectorate. While Christian missions were given unfettered opportunities to start schools in the South, education was rigidly controlled in the North (Kuu-ire, 2009) with much stress ostensibly placed on fostering 'respect for native rulers and institutions', to avoid 'denationalization' and the creation of 'a half-baked European' (Benneh, 1973a). Indeed, the North then virtually became the labour pool for the

country (Benneh, 1973b; Songsore, 2003). This seemingly discriminatory policy manifested clearly in national politics. While southerners were appointed to the Legislative Council since 1850, it was only in 1951 that northerners were first represented (Dickson, 1968; Kuu-ire, 2009). Justifying the situation, Lord Hailey in 1944 noted: ‘in the Northern Territories no demand for participation in the Legislative Council so far has appeared’ (Dickson, 1971). We are of the opinion that such a demand could not have emerged organically considering the ‘wall’ built between the two regions, making the North ‘the step-child of central Gold Coast politics’ (Benneh, 1972), and using indirect rule both as a method and as an instrument to further development, and in the supposed necessity of isolating the North from ‘untoward influence’ from the South (Kuu-ire, 2009; Mort, 2009). A governor in 1912 (Governor Thornburn) stated that the Northern Territories were to ‘await their turn and any extensive programme designed to render the area more accessible must be suffered to stand over for a long time to come’. Another governor (Sir F. M. Hodgson) was even more emphatic:

... the trade values of the Northern Territories are not favourable as to their future, and lead me to the opinion that they possess no natural resources to develop. The region as far as I know is destitute of mineral wealth, it is destitute of valuable timbers, and does not produce either rubber or kola nuts or indeed any product of trade value. For the present, I cannot too strongly urge the employment of all available resources of the government upon the development of the country north of Kintampo I would not at present spend upon the northern territories a single penny more than is necessary for their suitable administration and the encouragement of the transit trade. (Sir F. M. Hodgson, cited in Bening, 2005: 40)

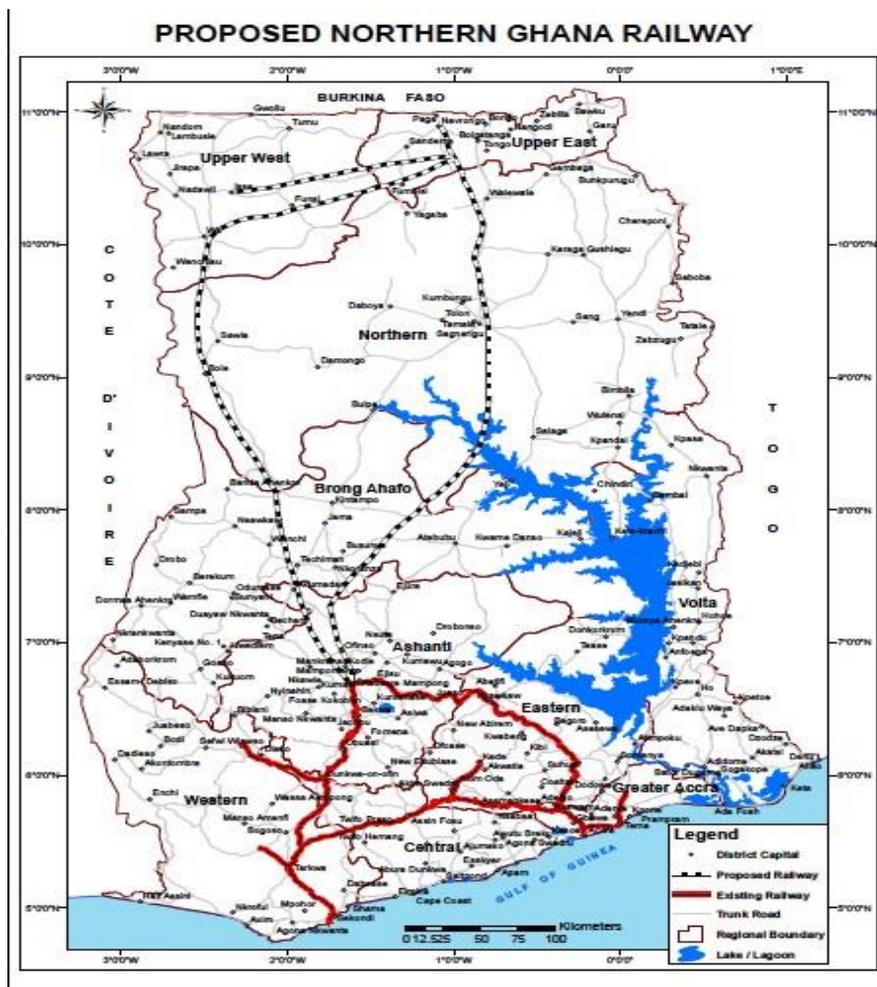
Undoubtedly, the foregoing lends credence to many authors’ suggested reasons for the genesis of spatial inequalities in the country, most of these authors pointing the finger of accusation at the country’s colonial legacy (Songsore, 2003; Bening, 2005). Thus, the colonial administrators beyond doubt invested more in regions that satisfied the following criteria (Songsore, 2003):

- Presence of exploitable and exportable resources (timber and mineral)
- Ease of cultivating the introduced cash or tree crops (mainly cocoa, coffee, and rubber)
- Ease with which these resources could be transported to the seaports (i.e. proximity to the coast).

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Indeed, as noted by prior studies (Songsore, 2003; Bening, 2005), the colonial administrators were more interested in the natural resources of the country than its people or development *per se*. It is therefore not surprising that southern Ghana—with its climate and vegetation suited to the production of cash and tree crops such as cocoa, coffee, and rubber, as well as its possibilities for timber and mining exploitation—attracted colonial investments (Aryeetey & McKay, 2007). Among other things, these regions were connected by transportation links, mainly railways and roads, and other infrastructure that served as growth poles for accelerated development, attracting human resources from the North and further weakening the capacity of the North to initiate and promote local development. Figure 2 shows the existing and planned rail network for the country.

Figure 2: Map of Ghana showing the existing and planned rail network for the country



Source: Adopted from Dickson, 1968

Post-colonial development trajectories

However, critical examination of the Ghana's post-colonial development policies and strategies show these cannot escape blame either (Songsore, 2003). And while there are many academic overviews, political debates, and media discussions referring justifiably to the negative footprints of colonial policies on development in the North, we should not avoid looking at some of the flaws and indecisiveness in these post-colonial policies, some of which are discussed below.

From the 1960s to 1970s

The period between the 1950s and 1960s was 'quite promising' (ibid.) and marked a major landmark when the government recognized the developmental challenges of the North and created tailored policies to address them (Bening, 2005). First, there was a 10-year plan launched in 1951, but its implementation was halved for no apparent reason (Afful, 2016: 262). A second plan, launched in 1959, was to last for five years, but Afful notes that it was also truncated and accuses it of being little more than a shopping list of projects. Hence, the country's spatial development at independence remained geographically skewed in favour of the resource-rich South (Bening, 2005). After independence, the president sought to 'right the wrong' through a 7-Year Development Plan (1964–1970), centring on import substitution industrialization underpinned by 'socialist ideology' (Songsore 2003). The plan was in accord with then President Nkrumah's popular saying that 'the Black man was capable of managing his own affairs', and it was driven by three principles:

- That, the economy must be developed rapidly and efficiently so that it shall, within the shortest time possible, ensure a high rate of productivity and also a high standard of living to every citizen.
- That, the income from our physical assets and from the labour of our people must be utilized for socially purposeful ends. Never must public want and private influence be allowed to co-exist in Ghana.
- That, the community, through its Government, must play a major role in the economy. Accordingly, the need for the most rapid growth of the public and cooperative sector in productive enterprises must be kept in forefront of Government policy.

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(Page 2 of Plan, 1963/64 – 1969/70).

In principle, the 7-Year Plan basically aimed at diversifying and modernizing the economic structure and, as Afful (2016: 263) puts it, ‘if one reads of the different plantations and ranches that were established, it is difficult not to feel nostalgic’. Typically, the state farm concept, for example, sought to modernize agriculture and provide raw materials for Ghana to become an ‘industrial trading country’ (Kuu-ire, 2009; Afful, 2016). Finally, and for the first time in the country’s history, the North had some import substitution industries, including the Nasia Rice Mills, the Zuarungu Meat Factory, and the Pualugu Tomato Factory (Kuu-ire, 2009). However, the lack of managerial, administrative, and technical talents became problematic, while the government’s inability to sustain subsidies to farmers significantly affected productivity (Bening, 2005). The end of the ‘socialist-induced’ investments were in sight with Nkrumah’s overthrow in 1966 (Sowa, 2002). The Busia government that followed in 1969 focused mainly on rural development, which could also have benefited the North but for Busia’s overthrow in 1972. The Acheampong regime that followed, with its flagship policy ‘operation feed yourself’, significantly improved rural infrastructure, including the construction of the Tono and Veve irrigation projects in the North (Apusigah, 2002; Kuu-ire, 2009). The period was unique and ‘quite promising’ (Songsore, 2003); and, but for various military interventions, perhaps the causes of the duality in our national development trajectories might have been properly identified, adequately tackled, and permanently uprooted.

From the 1980s to 1990s

Ghana witnessed its long military rule under President Rawlings beginning in the 1980s, when the Provisional National Defense Council (PNDC) took over the reins of government through a coup d’état. The government initially pursued a pro-socialist ideology and policies which the country had neither the financial nor technical resources to pursue (Afful, 2016). Economically, the passage of time made it obvious that the policies were out of step with the objective conditions in the country, compelling the government to unreservedly opt for a World Bank/IMF-inspired Structural Adjustment Programme (SAP) and Economic Recovery Program (ERP) in 1984, which resulted in over 300,000 public sector workers being retrenched (Kuu-ire, 2009; Oteng-Ababio, 2016). The adoption of neoliberal doctrines of the market and free trade in the 1980s and early

1990s eventually led to serious equity gaps (Abugre, 1993) and particularly increased poverty in the North, with the introduction of user charges on social services (Bekye, 1998). Although the economic restructuring might have initially increased labour productivity, it nonetheless resulted in increased rates of unemployment and the worsening of an already unbalanced income distribution (Aryeetey & McKay, 2007; Afful, 2016).

To mitigate the social repercussions of SAP, the government launched a blueprint for sustainable socio-economic development (Vision 2020 Policy) in 1995. This initiative led to the establishment of the Upper West region and the University for Development Studies, as well as the creation of new districts, including Bongo, Sabon-Chereponi, and Zabzugu-Tatale, as a way of deepening the decentralization process and facilitating geographical equity in development. Although Vision 2020 was intended to facilitate rapid economic development (WDR, 2006; Afful, 2016: 264), from a technical perspective there are claims that the ‘policy was worse than the 7-year development plan’, particularly when any positive gains in the economy were not evenly distributed. In the main, regions outside the ‘mineral-rich and the fertile cocoa-growing areas experienced a more pronounced economic and political marginalization’ (Aryeetey & McKay, 2007), a situation which was not necessarily much different from the colonial period aside from the fact that the current one was happening in the post-independence era and being perpetrated by Ghanaians on Ghanaians.

From 2000 to the present

The year 2001 saw the coming into office of the New Patriotic Party (NPP) government, which coincided with the truncation of NDC’s Vision 2020 policy (Tamakloe, 2014). In its stead, a new policy guide was formulated, the Ghana Poverty Reduction Strategy Programme (GPRSP I, II), though in principle it mimics the NDC’s Vision 2020 document (IMF, 2006). Although similar in content, its ‘death’ had long been forewarned and predicted (Tamakloe, 2014). In terms of policy direction, the GPRS II acknowledged the developmental challenges of the North and ambitiously sought to address them through community-specific, tailored projects, including completing of the linkage of the North to the South through an efficient railway system, a plan which had been on the drawing board since colonial times. The government made significant progress in the provision of social services—including the implementation of the National Health Insurance Scheme and the introduction of the School Feeding Programme and the Livelihood Empowerment Against

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Poverty (LEAP) Programme—yet there was no structural transformation economically of the North. Indeed, the planned North–South railway link still remains on paper (Kuu-ire, 2009).

A change in government in 2010 unsurprisingly saw the end of GPRSP I & II and the introduction of yet another policy initiative, the Medium-Term National Development Plan I and II by the Mills-led NDC administration in 2012. The policy established SADA to replace the NPP-initiated Northern Development Fund, under the rubrics of propelling growth and restoring regional balance (Gyasi et al., 2014). As expected, the politically induced policy (dis)continuity re-surfaced when, even prior to the 2016 general election, which the NPP won, their vice-presidential candidate hinted at replacing SADA with a Northern Development Authority as a catalyst for major transformation (Naatogmah, 2016).

Clearly, all the governments since the Fourth Republic appear in agreement on the causal factors for the distressing North–South duality. However, there is little agreement over how to remedy the situation. Theoretically, each policy initiative may have good intentions, yet we consider that the ‘unprofessional’ ritual of policy (dis)continuities and lack of sustained investments have been major drawbacks. For now, our study uncovers significant differences of opinion on the development of the North and a strong lack of agreement in various governments on how to handle the issue with tact so as not to alienate northern and ethnic voters that might ‘take it out on heavy-handed government at election time’ (Tsikata & Senni, 2004). Under the circumstances, the region currently falls under the whim and caprices of political elites, thus consigning the majority of residents to living in distressing conditions—limited opportunities for gainful employment in the formal economy, severe environmental degradation, pauperization, and increasing inequalities—which have become more or less permanent conditions of monumental proportions (Oteng-Ababio & Grant, 2017). Indeed, a 2005 DFID report paints a gloomy picture:

If northern Ghana had grown at the country’s average rate during the 1990s, it would have added substantially to Ghana’s average income and foreign exchange earnings. Northern Ghana has not produced the key export commodities, has received much lower inflows of remittances, and participated much less in trading activities.... These are the major factors explaining [its] poor growth performance. A significant proportion of its population is extremely vulnerable and food insecure. A substantial majority remains poor.

Can a 'resource-constrained' region develop?

Within the last two decades, Ghana has experienced years of double-digit growth, partly courtesy of the offshore oil discovery, and been promoted to a country of middle-income status (Oteng-Ababio, 2016), albeit this growth has been skewed disproportionately in favour of the South's development (Oteng-Ababio & Grant, 2017). This complicates earlier studies which indicate that a small increase in agricultural production—the means of livelihood for over 70% of the North's population—could potentially bring the region out of poverty (Al-Hassan & Diao, 2007; Al-Hassan & Poulton, 2009). The magnitude and the entrenched historical antecedents of the problem (currently the prevalence of poverty in the North is about 52–88% compared with 30% in Brong-Ahafo and Volta regions, and with 12–20% in the five southern regions) call for a sustained political commitment other than just increasing agricultural production. Granted that improved agriculture holds the key to the region's future development, it is also prudent that any policy intervention is empirically targeted and focused, which demands sustained political will and commitment.

Our position is in accord with the aspirations of SADA, which has developed a long-term development plan complemented by specific sectoral and urban master plans for the rapid transformation of the SADA zone (Abugre, 2012). The master plan, according to Abugre, articulates a strong and clear vision, identify game-changing investments and actions hoping to attract and channel public and private investments, skills development, and measures to modernize public services. Emphasizing the authority's commitment to its mandate and vision, the CEO at a press briefing noted: 'It will also undertake socio-economic analysis and review planning framework aimed at positioning the zone, developing a unique regional vision, specific economic sector and environment plans'—since, according to the CEO, the 'Authority is mandated to provide planning guidance to government to ensure accelerated, comprehensive and integrated development of the Northern Savannah Ecological zone' (ibid.).

Awakening the North's 'sleeping giant'

Northern Ghana, along with Burkina Faso, produces the best stearin-rich shea nuts in demand by most cosmetics industries, where the possibilities of consumption growth and value addition are greatest (DFID, 2005). The challenge of turning this comparative advantage into a competitive

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advantage is significant but not insuperable. We caution, along with others (ibid.), against the almost exclusive obsession with physical environmental challenges and enduring failures in development to the exclusion of almost everything else—issues ranging from the underlying causes of fewer economic opportunities and poor infrastructure to unreliable availability of advanced agricultural technologies, limited knowledge on improved agronomic production and management practices, inadequate collaboration among the sector ministries, and, more importantly, policy inconsistencies. The lopsided focus on physical environment factors ties into unreflective sensationalism and ideological war, thus overshadowing the real issues underpinning the region’s underdevelopment (CIA, 2013). In recent years, many studies have correctly noted that the North has an absolute competitive advantage⁵ in producing some Guinea savannah crops (see Table 2) and wild products such as shea nut, which could feed the nation over a decade if well utilized (DFID, 2005).

⁵ Comparative advantage refers to the products which the country is *least bad* at producing—or, technically, where the ratio between domestic costs of production and those of the most efficient producer are lowest. Competitive advantage generally refers to producing goods at low cost, but also to managing supply chains so that goods delivered to the world market meet all other required criteria, such as quality, consistency, delivery time, and reliability.

Table 4 Comparative and competitive advantage in northern Ghana

Commodity	National	Sub-regional	World	Supply Chain
Shea nuts, Shea butter	Shea nuts only grow in guinea savannah. 99 million (wild) trees in northern Ghana (1996). Harvest collected by peasant women	Some import and export of shea nuts to and from exporters from the sub-region and processing plants.	Very low cost fat for food and cosmetics industry. Growing world demand. Highest quality for cosmetics in northern Ghana and Burkina Faso.	New ventures adding value in northern Ghana: quality shea butter production for exports; shea butter products from southern Ghana
Cotton	Cotton production entirely located in northern Ghana. Entirely produces by smallholders. World market prices lower than Ghana cost of production.	Yields are significantly lower than neighbours.	West Africa produces low cost good quality cotton, competitive on the world markets. Ghanaian sector's current institutional arrangement constrain its participation.	Institutional arrangements require review and renewal. Currently no value added beyond ginning. Potential currently constrained by water.
Cashew	Northern Ghana produces best quality cashews. Brong Ahafo major production zones.	Neighbouring countries have more organised production.	Structurally oversupplied market. Yields in Ghana low; market poorly organised.	Export processing company located in Accra, currently purchasing from outside as well as inside Ghana to ensure supplies
Rice	Reasonably low cost rice produced all over Ghana; in substantial volume only in the north, due to land availability.	Mali exports high quality rice to the sub-region. Possible model for northern Ghana given growing urban demand	Ghana is a substantial importer from USA, Thailand and Vietnam. Years of food aid imports have transformed consumer tastes.	Gradual expansion of domestic demand for small scale parboiled rice produced by women's group. Further market development needed before re-opening major rice mill.
Tourism	Big game and birds - Mole and Bui	Low cost/good quality in sub-region.	Cannot compete with East/Southern Africa.	Need to expand domestic market and link to cultural/historical slavery.

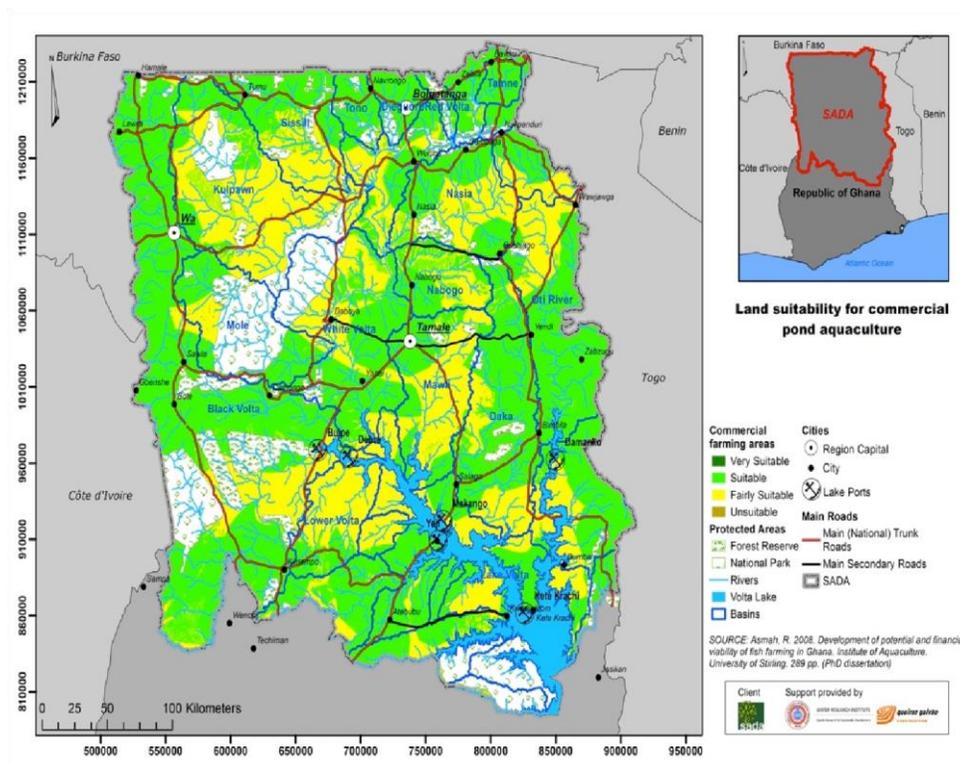
Source: Compiled from DFID, 2005

Table 2 summarizes the possibilities of achieving competitive advantage across several sectors, as revealed by earlier studies (DFID, 2005; SADA, 2015). Significantly, these studies provide

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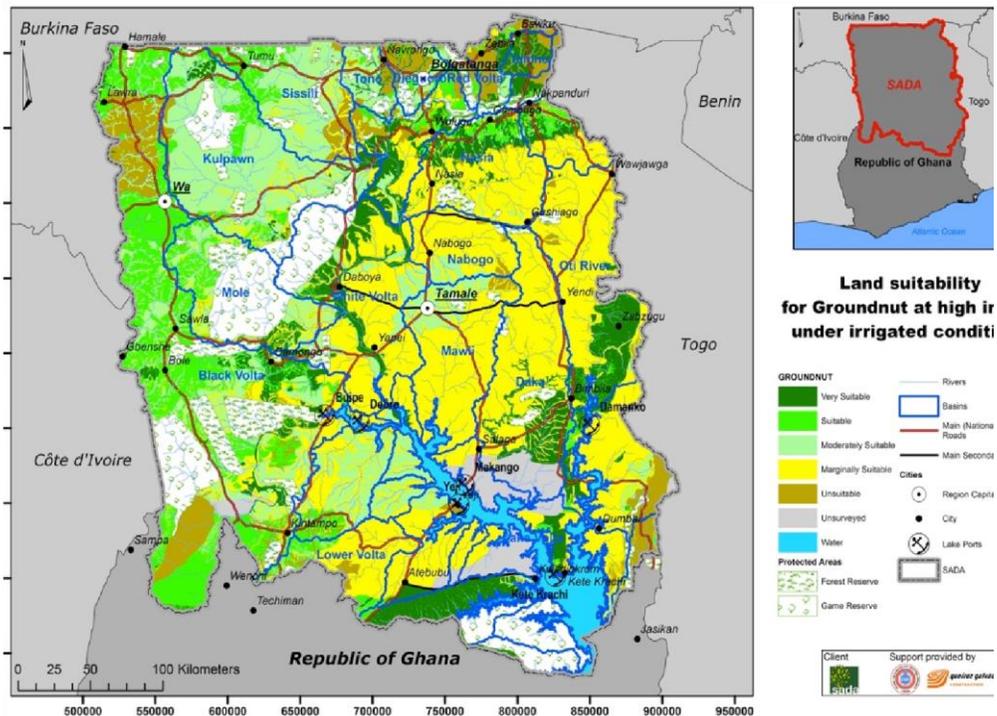
empirical data on locations where some identified crops have potential for both area and yield increases. The greatest potential has lain with groundnuts and the least with millet (and sorghum). Indeed, studies conducted for and on behalf of SADA reveal that substantial areas in the North are either competitively suitable for commercial pond aquaculture or groundnuts cultivation under irrigated conditions (Figures 3A & 3B) (SADA, 2015). In addition, cotton—which used to be widely cultivated with more than 35,000 tons output by small-scale farmers in the late 1990s—has slumped to just around 15,000 tons in recent times, but this can be re-kindled with dedicated policies (Yaro, 2013; Sammadar et al., 2015). We are particularly optimistic that, given the small size of the Ghanaian cotton market, achieving a high rate of future growth would almost certainly allow export of substantial volumes and values in addition to providing an opportunity to consciously attempt to increase the domestic market.

Figure 3a: Map showing areas in SADA zone suitable for pond aquaculture



Source: SADA Office, Accra (2016)

Figure 3b: Map showing areas suitable groundnuts cultivation under irrigation.



Source: SADA Office, Accra (2016)

We further believe that beyond establishing what crops the region can produce competitively, it is also imperative to analyse the crops' backward and forward linkages (their multiplier effects) within the different sectors of the local economy (DFID, 2005). Structurally, the greater the multiplier effects, the more rapid the anticipated growth impact. We expect the multiplier to be potentially largest among the low-income groups because, as noted by a DFID report, their higher propensity to spend on farm non-tradeables. Our discussions with MoFA officials and other key informants revealed that significant multipliers follow when companies who purchase raw materials from out-growers of crops such as mangoes, shea butter, and rice process them *in situ*. We observed that nowhere is the need for positive market links more necessary than in the shea butter industry. A particular example is the Shebu Company in Savelugu, Northern region, which is a subsidiary of the Dutch Oilseeds Company Loders Croklaan. The company purchases low-value shea nuts and provides secure self-employment for thousands of women. However, these women could make more income if they were adding value (processing the nuts into shea butter), for which there is not only a substantial and steady local (national) market, but also a rapidly

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developing international market, accessible only when the quality is right and there is an intermediary to buy the butter. Clearly, these opportunities, which the Sahelian countries beyond Ghana have already taken advantage of, defy the simplistic, ideationally defunct environmentalist thesis.

Suitable eco-tourism potential sites

Amidst the plethora of strategic-sounding buzzwords, recent studies also indicate that eco-tourism offers another window of hope for reversing the underdevelopment of northern Ghana. Our interaction with officials from SADA, regional coordinating councils, and Ghana Tourist Board revealed ‘unlimited and untapped eco-tourism potentials’, with the region containing one of the country’s single largest eco-tourist sites, the Mole Game Reserve, which has seen rising visitor numbers [personal interviews, October 2016]. The question is why the massive potential of the park remains largely undeveloped. An official of the tourist board during the key informant interviews revealed that its wildlife division has drawn up an ambitious plan regarding the development of the park, using a public–private participation model and forging a strong link with the nearby communities who are structurally disadvantaged by loss of access to the reserve. According to our key informant, the potential tourist sites within the North include the Narabanga Defence Wall, Larabanga Mosque, Larabanga Mystery Stone, and the Salaga Slave Market, all in the Northern region. In addition, interesting sites in the Upper East Region include the Crocodile Pond at Paga, the Sirigu Cultural Village, and the Tenzug Shrine near Bolgatanga, while the Upper West can boast of the Wichau Hippopotamous sanctuary and the Wa Naa’s palace (see Figure 4).

Encouraging is the realization that there have been critical public investments in this region, which can serve as catalysts for tourism development. These include the tarred road through the Mole Reserve (including an already functioning airstrip at Mole), tarred roads within the Mole Reserve, and the tarred road between Wa and Techiman, all of which provide welcome access. We are optimistic that a little more conscious, local re-prioritization of some of these investments and the development of sufficient (interconnected) local tourist sites, which will offer potential tourists considerable choices on where to go, will really boost the tourist industry. We are also confident that when well executed, the tourist industry can earn significant income and create employment for the local youth.

Figure 4: Map showing tourist attraction centres in the SADA zone.



Source: SADA Office, Accra, (2016)

More significantly, the future looks brighter if efforts are made to create a network of developed tourist sites around the North with at least minimal facilities (especially hotels and restaurants, currently highly inadequate in quantity and quality outside Tamale and possibly Bolgatanga) to retain tourists for a period of time. We believe that leaving such a venture to ‘manpower-starved’ district assemblies or financially crippled (handicapped) regional tourist boards, which would have been the more appropriate body to galvanize and coordinate these activities, will not reap the necessary results. The government has to provide local groups and businesses with the means to

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attract visitors to the sites, while also encouraging some hoteliers to enter into mutually beneficial partnerships. This will help improve hotel occupancy rates and ensure more effective marketing of the tourist sites at national and international levels. When properly managed, the tourism sector also sets in motion forward and backward linkages, whereby the existence of major attractions provides a market for minor sites as part of a tourist 'package' and can also promote local tourist enterprise supply chains.

Concluding remarks: Navigating the environmental challenge

Northern Ghana presents a wealth of interests for geographical studies. Our paper highlights how both distant and proximate factors explain the region's underdevelopment and why all major attempts made to date to revitalize its economy have failed to achieve the intended results. Clearly, the reasons are many and varied; nonetheless, a lack of appreciation of the fundamental problems predominates. Since pre-colonial days, the majority of the people in the North have lived and continue to live at a subsistence level, using rudimentary cultural techniques, though the region is today known to have an absolute competitive advantage in producing many Guinea savannah crops and wild products such as shea nut (DFID, 2005; Gyasi et al., 2014; Fuseini & Kemp, 2015). Equally important is the region's potential for lifting itself out of poverty through eco-tourism, particularly when there has been some critical infrastructural development to aid tourism promotion. Oteng-Ababio et al. (2016) have argued that, for thousands of years, people in the region have co-existed with the ecosystems, so-called limitations notwithstanding, enjoying the products, functions, services, and protection and contributing to the culture and life style provided by these wonderful communities.

Although the region is said to have a competitive advantage in the production of some crops, no comparative advantage happens automatically. It requires instituting empirically informed governance structures, involving local government and their relationship with civil society groups within the regional boundaries. Clearly, without significant improvements in transport infrastructure, schemes for general economic development in northern Ghana have very little chance of success. Within the past two decades, many schemes for economic transformation in the region have been put into operation, but in a rather piece-meal fashion or truncated half-way owing

to changes in governance. Indeed, the problems to be overcome are not new; neither is the general context, within which the particular problems are found changed. Nevertheless, certain identified lines of solution followed without much success in the past are surprisingly still favoured. A genetic approach to the study of these problems helps to explain their persistence, while underscoring the need for attack on a broad front and indicating a scale of priority against which the problems can be considered.

The potential remedies include implementing appropriate choices and serving those already disadvantaged so that they do not suffer further. Even regarding the perceived 'blessed' regions, provisions must be made to include the interests of people outside their boundaries and future generations (DFID, 2005). It is incumbent on citizens and businesses to ensure integrated development, which depends largely on their acceptance of other practices that do not directly serve or affect them but may limit their consumption choices. This will undoubtedly make local and regional resource use sustainable for future generations. Ultimately, this may demand modifying some aspects of the local government regulations (e.g. those governing land use) and ensuring that government contracts address these multiple goals. Attempts should also be made to regularize situations where incentives, regulations, and standards are set at higher levels of government—although their eventual implementation often falls on local authorities. More importantly, we need to appreciate the fact that it will be difficult for many local governments in extremely deprived regions to address these goals, such as promoting eco-tourism, not least because it is expensive to undertake capital investments without central government support. Nonetheless, it is always prudent to seek local knowledge even when a decision is necessarily a top-down one.

Regarding the agricultural sub-sector, which employs about 70% of the population in the northern zone, there are many examples of innovation and better practice from the Sahelian countries, countries with perhaps worse environmental conditions but where better water management for small-holder farming has produced larger and more reliable yields and increased the income of farmers. Despite the huge potential of irrigation (see SADA, 2016), the overall water withdrawals for agriculture within our research localities are still limited; indeed, irrigation uses less than 3% of the total renewable resources, compared with 36% in South Asia and 51% in the Middle East and North Africa (World Bank, 2007). Empirical lessons from Niger, Mali, Burkina Faso, and

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northern Nigeria identified five business lines which can effectively increase investment in water management in a rain-fed environment like northern Ghana: market-oriented irrigation on a PPP basis; small-holder private irrigation for high-value markets; small-scale, community-managed irrigation for local markets; large-scale irrigation; and improved water control and watershed management (World Bank, 2011). Experience shows that the introduction and dissemination of individually managed, low-cost irrigation technologies gave incentives to many small-holder farmers (often less than 1 ha) to use privately managed irrigation to increase the productivity of their farms.

In Ghana, it is not uncommon for some socialist ideologues to blame solely the colonial authorities for the underdevelopment of the North (Bening, 2005), or to blame the region's environmental conditions. The paradox is why other regions have grown rapidly and avoided most of the problems confronting northern Ghana. Lessons from Mali and Burkina Faso proffer significant clues: prior studies (see World Bank, 2007) reveal a lack of continuity between projects and constraints on the dissemination of low-cost irrigation technologies. Following the positive experiences in Niger, small-scale irrigation pilot projects were 'funded by the World Bank in Mali [...] and in Burkina Faso [...]'.⁶ The DIPAC pilot project, which also established a guarantee fund (without subsidies), successfully began the dissemination of new technologies and strengthening of the private sector. The farmers involved doubled or tripled the area of their irrigated plots and increased their incomes by 50% (World Bank, 2011).

From the foregoing, we hasten to conclude that the underdevelopment in northern Ghana can be blamed partly on policy discontinuities pursued by post-independence governments. These policy inconsistencies at the national level create poor land-use practices at the local level, which ultimately increase the climatic challenges, particularly among lower-income groups. Oteng-

⁶ Cited in World Bank (2011). Lessons learned in the development of small-holder private irrigation for high-value crops in West Africa. Joint Dissemination Paper. The World Bank, FAO, IFAD, PRACTICA, ARID and IWMI. Issue 4.

Ababio (2017) raises the issue for Chiatanga in Wa West District, where farms are compelled to farm in the basin of the Black Volta owing to prolonged drought. Such practices not only expose the river (and the aquatic life and its biodiversity) to evapotranspiration but also condemn the farmers to the ravages of occasional flooding (Sammdhar et al., 2015). Meanwhile, there are many co-benefits between ensuring project continuity, improving livelihoods, and building resilience to climate change. The example of SADA and its spatial development of the SADA zone have been particularly significant in three aspects: the scale, the extent of community involvement, and the extent to which it seeks to institutionalize community-driven solutions within local governments (Afful, 2016). Although this programme was never intended as a response to climate change, its successful implementation can reduce risk levels because of the better land-use practices its structural plans envisage.

References

- Abugre, C. (1993). Behind the crowded shelves: An assessment of Ghana's structural adjustment experience. *Manoscritto inedito*, Institute for Food and Development Policy, San Francisco, 87.
- Abugre, J. B. (2012). How managerial interactions affect employees' work output in Ghanaian organizations. *African Journal of Economic and Management Studies*, 3(2), 204-226, <https://doi.org/10.1108/20400701211265009>
- Afful, K. N. (2016). Policies for technological development/innovation and the sustained economic growth of the Ghanaian economy. Weshin Innovation, Accra, Ghana.
- Al-Hassan, R. M. & Diao, X. (2007). *Regional disparities in Ghana: Policy options and public investment implications*. Washington, DC: International Food Policy Research Institute.
- Al-Hassan, R. & Poulton, C. (2009). Agriculture and social protection in Ghana.
- Apusigah, A. A. (2002). Sacrificing social justice for economic growth: A problem of World Bank led socio-economic reforms in Ghana. *Studies in National and International Development*.
- Aryeetey, E. & McKay, A. (2007). Ghana: The challenge of translating sustained growth into poverty reduction. In T. Beslay & L. Cord (Eds.), *Delivering on the promise of pro-poor growth: Insights and lessons from country experiences* (pp. 147-168). Basingstoke and Washington, D.C.: Palgrave Macmillan and World Bank.

Is the underdevelopment of northern Ghana a case of environmental determinism or governance crisis?

- Bagson, E. & Owusu, A. Y. (2016). Securing the urban space: on whose terms? Insights from poverty and crime baseline survey in Tamale, Ghana. *Ghana Journal of Geography*, 8(1), 124-147.
- Barry, B., Obuobie, E., Andreini, M., Andah, W. & Pluquet, M. (2005). The Volta River Basin: Comprehensive assessment of water management in agriculture. *International Water Management Institute*. (IWMI) Available at: http://www.iwmi.cgiar.org/assessment/files_new/research_projects/River_Basin_Development_and_Management/VoltaRiverBasin_Boubacar.pdf [Accessed 5 January 2013].
- Bekye, P. (1998). *Peasant development: The case of northern Ghana*. Leuven: ACCO
- Bening, R. B (1990). A history of education in Northern Ghana, 1907–1976, Accra, Ghana University Press.
- Bening, R. B. (2005). *The University for Development Studies in the history of higher education in Ghana*. Accra: Hish Tahwah Publications.
- Benneh, G. (1972). The response of farmers in northern Ghana to the introduction of mixed farming: A case study. *Geografiska Annaler*, Series B, 54(2), 95-103.
- Benneh, G. (1973a). Land tenure and farming systems in a Sissala village in Northern Ghana. *Bulletin de l'IFAN*: 361-379.
- Benneh, G. (1973b). Population and food production in a northern savanna village of Ghana. *Food and Nutrition in Africa (Ghana)*, 12:134-146.
- Brukum, N. J. K. (1998). Studied neglect or lack of resources? The socio-economic underdevelopment of northern Ghana under British colonial rule. *Transactions of the Historical Society of Ghana*, 2, 117-131.
- Central Intelligence Agency (CIA) (2013). *The world factbook: Ghana*. <https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html> [Accessed 5 February 2013].
- DFID (Department for International Development) (2005). *Economic growth in northern Ghana*. Available at: <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3530.pdf> [Accessed 7 July 2017].
- Dickson, K. B. (1968). Background to the problem of economic development in northern Ghana. *Annals of the Association of American Geographers*, 58(4), 686-696
- Dickson, K. B. (1971). *A historical geography of Ghana*. Cambridge: Cambridge University Press.
- Dickson, K. B. (1972). Dynamics of agricultural innovation in northern Ghana. *Ghana Social Science Journal*, 2(2), 10-18.

- Febvre, L. (1922, 1925). *A geographical introduction to history*. New York: Knopf. First published as *La terre et devolution humaine*.
- Fuseini, I. & Kemp, J. (2015). A review of spatial planning in Ghana's socio-economic development trajectory: A sustainable development perspective. *Land Use Policy*, 47: 309-320.
- GSS (Ghana Statistical Service) (2013). 2010 population and housing census: Regional analytical report, Northern Region. Accra.
- Gyasi, E. A., Kranjac-Berisavljevic, G., Fosu, M., Mensah, A. M., Yiran, G. A. B. & Fuseini, I. (2014). Managing threats and opportunities of urbanisation for urban and peri-urban agriculture in Tamale, Ghana. In B. Maheshwari, R. Purohit, H. Malano, V. P. Singh & P. Amerasinghe (Eds.), *The security of water, food, energy and live-ability of cities: Challenges and opportunities for peri-urban futures* (pp. 87–97). Springer, Dordrecht, <http://dx.doi.org/10.1007/978-94-017-8878-6>
- Hettner, A. (1927). *Die geographie: ihre geschichte, ihr wesen und ihre methoden* (pp. 74-90). F. Hirt.
- Holt-Jensen, A. (2009). *Geography: History and concept*, 4th ed. London: Sage.
- Hutchful, E. (1996). Ghana 1983–94. In P. Engberg-Pedersen, P. Gibbon, P. Raikes & L. Udsholt (Eds.), *Limits of adjustment in Africa*. Centre for Development Research with James Currey Ltd & Heinemann.
- IMF (International Monetary Fund) (2006). *Ghana: Poverty reduction strategy paper*. IMF Country Report No. 06/225 Available at: <https://www.imf.org/external/pubs/ft/scr/2006/cr06225.pdf> [Accessed 7 July 2017].
- Kuu-ire, S. M. A. (2009). Poverty reduction in northern Ghana: A review of colonial and post-independence development strategies. *Ghana Journal of Development Studies*, 6(1), 175-203.
- Mitchell, D. (2000). *Cultural geography: A critical introduction* (p. xiii). Oxford: Blackwell.
- Mort, S. K. (2009). Unveiling the secrets of the north–south development gap of Ghana. Available at: <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Unveiling-the-Secrets-of-the-North-South-Development-Gap-of-Ghana-161705> [Accessed 7 July 2017].
- Naatogmah, A. K. (2016). NPP to replace SADA with Northern Development Authority Available at: <http://citifmonline.com/2016/11/23/npp-to-replace-sada-with-northern-development-authority/#sthash.ZJMU6goT.dpuf> [Accessed 7 July 2017].
- Oppong-Anane, K. (2006). Country pasture/forage resources profiles: Ghana. Food and Agriculture Organization of the United Nations (FAO). <http://www.fao.org/ag/AGP/AGPC/doc/Counprof/PDF%20files/Ghana-English.pdf> [Accessed 7 July 2017].

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- Oteng-Ababio, M. (2016). 'The oil is drilled in Takoradi, but the money is counted in Accra': The paradox of plenty in the oil city, Ghana. *Journal of Asian and African Studies* 1–17. DOI: 10.1177/0021909616677371
- Oteng-Ababio, M. (2017). 'The policy was meant to be a dream, not a nightmare': Songlines for (in)efficient environmental sanitation in Ghana. *Ghana Journal of Geography* (in press).
- Oteng-Ababio, M. & Grant, R. (2017). The dirty little secrets of precarious places: Urban inhabitancy and the right to city. *Geoforum*, (in press).
- Oteng-Ababio, M., Yokomatsu M., Dzivenu, T., Samaddar, S. & Akudugu J. A. (2016). Can local adaptation and mitigation strategies cooperate and synergize one another? Lessons from Wa West District, Ghana. *Environmental Management* (in press).
- Plange N. K. (1979). Underdevelopment in northern Ghana: Natural causes or colonial capitalism? *Review of African Political Economy*, 15/16, 4-14.
- SADA (Savannah Accelerated Development Authority) (2016). Building the transformational blocks in the northern savanna ecological zone (NSEZ). Available at: http://sadagh.org/application/files/8414/8820/3728/SADA_Annual_Report_2015__Draft_-_R.pdf [Accessed 7 July 2017].
- Samaddar, S., Yokomatsu, M., Dayour, F., Oteng-Ababio, M., Dzivenu, T., Adams, M. & Ishikawa, H. (2015). Evaluating effective public participation in disaster management and climate change adaptation: Insights from northern Ghana through a user-based approach. *Risk, Hazards & Crisis in Public Policy*, 6(1), 117-143.
- Sample, E. C. (1911). *Influences of geographic environment, on the basis of Ratzel's system of anthropo-geography*. The Belknap Press of Harvard University Press: Alexandria.
- Songsore, J. (1979). Structural crisis, dependent capitalist development and regional inequality in Ghana. ISS Occasional Papers, No. 71, The Hague.
- Songsore, J. (2003). *Towards a better understanding of urban change: Urbanization, national development and inequality in Ghana*. Accra: Ghana Universities Press.
- Sowa, N. K. (2002). An assessment of poverty reducing policies and programmes in Ghana. A Working Paper Prepared for Presentation at a MIMAP Workshop on Assessing Poverty Policies, IDRC, Rabat, Morocco.
- Tamakloe, K. (2014). Ghana's Vision 2020, 7-year Development Plan. Available at: <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghana-s-vision-2020-7-year-development-Plan-319697> [Accessed 7 July 2017].
- Tsikata, D. & Senni, W. (2004). Identities, inequalities and conflicts in Ghana, Centre for research on inequality, human security and ethnicity (Cruise) Working Paper 5; Queen Elizabeth House, University of Oxford.

WDR (World Development Report) (2006). Bridging the north south divide in Ghana: Draft summary. Available at: <http://www.rrojasdatabank.info/wir2006/shepherd.pdf>

World Bank (2007). *Africa region: Irrigation business plan*. World Bank, Washington, DC.

World Bank (2011). *Lessons learned in the development of smallholder private irrigation for high-value crops in West Africa*. Joint Dissemination Paper. The World Bank, FAO, IFAD, PRACTICA, ARID and IWMI. Issue 4.

Yaro, J. A. (2013). *Rural development in northern Ghana*. Hauppauge, New York, United States: Nova Science Publishers.